# THE JOHNS HOPKINS UNIVERSITY

CONFERRING OF DEGREES

AT THE CLOSE OF THE

NINETY-FOURTH ACADEMIC YEAR

JHU

MAY 27, 1970

KEYSER QUADRANGLE

HOMEWOOD

BALTIMORE, MARYLAND

THE JOHNS HOPKINS UNIVERSITY

Office of the
University Registrar

July 15, 1970

For those who use the Commencement Program as an official record of the awarding of degrees, please note the following changes to the 1970 Commencement Program:

## ADDITIONS AND DELETIONS

1. Bachelor of Arts — New Total - 363

Add: Michael Anthony Christianson, of Jewell, Iowa.

Delete:
David William Bosted
Matthew Stephen Bottkol
Laurence S.Campbell
William T. Cox
David Carr Denise
Marc A. Dowlen
John Robert Eckard, Jr.
Douglas Hale Eldridge
Peter Jonathan Harnik
Thomas Duncan Hess
Donald Ralph Hope
William Martin Howdon
James Paul Keogh
Elliot Ross Krieger
Philip Lawrence Olsen
Robert Michael Schreiber
Carl Alva Seacat
Stuart Allen Sheldon
Brian Phillips Turner
Joseph Crawford Wolfkill II

2. Bachelor of Science — New Total - 126

Delete: Philip Gurdon Mumford II

3. Bachelor of Science in Engineering — New Total - 109

Delete: William M. Schell

4. Master of Science (Evening College) — New Total - 116

Delete:
Carl Norman Fauntleroy, Jr.
Sidney Grollman
Robert Larue Maust, Jr.
Norman J. Plourde

5. Master of Public Health — New Total - 117

Add: Albert Richey Sharrett, of Pittsburgh, Pa., A.B. Oberlin College, 1959; M.A. Melbourne University, 1961; M.D. University of Pittsburgh, 1966.

Delete:
David Leroy Esler
Adeoye D. Kolawole

6. Doctor of Public Health — New Total - 9

Add: George John Dellaportas, of Kilkis, Greece, Diploma in Medicine Athens University, 1958; Diploma in Public Health Athens University School of Hygiene, 1961; M.P.H. The Johns Hopkins University, 1968. Population Dynamics.

7. Doctor of Philosophy (Hygiene and Public Health) New Total -7

Delete: Suzanne Elizabeth Bayley

8. Master of Arts (S.A.I.S.) New Total - 97

Add: Robert Erle Biles, of Chandler, Okla., B.A. University of Oklahoma 1964.

Delete:
George Wallace Alapas
Robert E. Arevalos
John Stephen Berger
Sharon Marie Carlson
Robert Neil Conner
Tamara Claudia Agnes Dahn
Zachary Tracy Irwin
Thomas Michael Mauge
Eleanor Ann Mitchell
George Robert Pugh
Emily C. Seigler
William Lee Shell
Mustapha Samuel Soni Sherman
Robert Allen Spade
Robert Alan Sperl
Paul Thomas Walker
Carolyn Troy Welch
Joan Stanley Whitmore
Lois G. Wolk

9. Doctor of Philosophy (S.A.I.S.) New Total - 10

Delete: Walid Khadduri

10. Master of Arts in Teaching (Arts and Sciences) New Total - 70

Delete:
Martha Esther Gellman
Suzanne Mari Pilmer Kaufmann
Trudi Ann Stroup

11. Doctor of Philosophy (Arts and Sciences) New Total - 182

Delete: Richard Alan Berk

## CORRECTIONS

1. Bachelor of Science in Engineering

Frank Albin Skirvan SHOULD READ Frank Albin Skrivan

2. Master of Science (Evening College)

Charles Grady Moran SHOULD READ Charles Grady Morgan

THE JOHNS HOPKINS UNIVERSITY

Office of
nstitutional Studies

1969-70
Academic Year

## Certificates and Degrees Conferred

| Degree and Division | | Through Nov.'69 | Through Feb.'70 | May 27 1970 | Totals for 1969-70 Men | Women | Total |
|---|---|---|---|---|---|---|---|
| Bachelor of Arts | (A&S) | 18 | 24 | 321 | 360 | 3 | 363 |
| Bachelor of Engineering Science | (A&S) | 2 | 4 | 56 | 62 | - | 62 |
| Bachelor of Science | (EVN) | 26 | 12 | 88 | 89 | 37 | 126 |
| Bachelor of Science in Engr. | (EVN) | 27 | 4 | 78 | 109 | - | 109 |
| Bachelor of Science in Nursing | (EVN) | - | - | - | - | - | - |
| Total Baccalaureate Degrees | | 73 | 44 | 543 | 620 | 40 | 660 |
| Master of Arts | (A&S) | 29 | 20 | 94 | 94 | 49 | 143 |
| Master of Arts in Teaching | (A&S) | 11 | 27 | 32 | 17 | 53 | 70 |
| Master of Science in Engr. | (A&S) | 8 | 4 | 8 | 18 | 2 | 20 |
| Master of Science in Engr. | (EVN) | - | - | - | - | - | - |
| Master of Science | (EVN) | 13 | 17 | 86 | 103 | 13 | 116 |
| Master of Education | (EVN) | 44 | 23 | 34 | 34 | 67 | 101 |
| Master of Liberal Arts | (EVN) | 37 | 23 | 56 | 56 | 60 | 116 |
| Master of Arts | (MED) | 6 | - | 2 | 7 | 1 | 8 |
| Master of Science | (HYG) | 2 | 1 | 4 | 5 | 2 | 7 |
| Master of Public Health | (HYG) | - | 3 | 114 | 86 | 31 | 117 |
| Master of Arts | (SAIS) | 3 | 2 | 92 | 76 | 21 | 97 |
| Total Masters Degrees | | 153 | 120 | 522 | 496 | 299 | 795 |
| Doctor of Philosophy | (A&S) | 57 | 32 | 93 | 154 | 28 | 182 |
| Doctor of Philosophy | (MED) | 3 | 1 | 1 | 5 | - | 5 |
| Doctor of Philosophy | (HYG) | - | 2 | 5 | 5 | 2 | 7 |
| Doctor of Philosophy | (SAIS) | 7 | 3 | - | 9 | 1 | 10 |
| Doctor of Medicine | (MED) | - | - | 98 | 88 | 10 | 98 |
| Doctor of Public Health | (HYG) | 1 | 3 | 5 | 7 | 2 | 9 |
| Doctor of Science | (HYG) | 3 | 3 | 4 | 7 | 3 | 10 |
| Total Doctoral Degrees | | 71 | 44 | 206 | 275 | 46 | 321 |
| Total Degrees in Course | | 297 | 208 | 1271 | 1391 | 385 | 1776 |
| Certificates of Advanced Study in Education | | 8 | 6 | 10 | 9 | 15 | 24 |
| Honorary Degrees | | - | 2 | 5 | 7 | - | 7 |

#S-40
7/9/70

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# ORDER OF PROCESSION

## MARSHALS

MICHAEL BEER
JEROME GAVIS
ROBERT E. GREEN
JOHN W. GRYDER
RICHARD A. MACKSEY
CLARA P. MC MAHON
EVANGELOS MOUDRIANAKIS
JOHN M. NEFF
JOHN W. PAYNE
EVERETT L. SCHILLER
HENRY M. SEIDEL
CHARLES R. WESTGATE

## THE GRADUATES

*

## MARSHALS

JAMES DEESE
JOHN WALTON

## THE FACULTIES

## MARSHALS

ALSOPH H. CORWIN
FERDINAND HAMBURGER

*

THE DEANS
THE VICE PRESIDENTS
THE TRUSTEES
AND HONORED GUESTS

*

## CHIEF MARSHAL

HENRY T. ROWELL

THE CHAPLAIN
STUDENT SPEAKERS
THE PRESENTORS OF THE HONORARY DEGREE CANDIDATES
THE HONORARY DEGREE CANDIDATES
THE CHAIRMAN OF THE BOARD OF TRUSTEES
THE PRESIDENT OF THE UNIVERSITY

*

# ORDER OF EVENTS

LINCOLN GORDON
*President of the University, presiding*

* * *

## PROCESSIONAL

"RIGAUDON"
*Andre Campra*

THE JOHNS HOPKINS BRASS CHOIR
*under the direction of*
EDWARD C. WOLF

*The audience is requested to stand as the Academic Procession moves into the area and to remain standing until after the Invocation and the singing of the University Ode.*

*

## INVOCATION

CHESTER L. WICKWIRE
*Chaplain of the University*

*

"THE STAR-SPANGLED BANNER"
"THE UNIVERSITY ODE"

*

## GREETINGS

ROBERT D. H. HARVEY
*Chairman of the Board of Trustees*

*

## REMARKS BY THE GRADUATES

HERBERT B. ALLEN
*School of Medicine*

*Division of Arts and Sciences (Graduate Level)*

THE HONORABLE ROBERT JAMES GERSTUNG
*Evening College*

ROGER LEEDS
*School of Advanced International Studies*

## REMARKS BY THE GRADUATES
*continued*

JOHN MARRON
*Division of Arts and Sciences (Undergraduate Level)*

JOHN WESLEY SIMMONS
*School of Hygiene and Public Health*

*

## CONFERRING OF HONORARY DEGREES

GEORGE HEBERTON EVANS, JR.
*Professor of Political Economy*
*The Johns Hopkins University*

WILDER PENFIELD
*Former Director of The Montreal Neurological Institute*

CURT PAUL RICHTER
*Professor Emeritus of Psychobiology*
*The Johns Hopkins University*

BENJAMIN HARRISON WILLIER
*Professor Emeritus of Biology*
*The Johns Hopkins University*

CLIFTON R. WHARTON, JR.
*President*
*Michigan State University*

*

## ADDRESS
CLIFTON R. WHARTON, JR.

*

## CONFERRING OF DEGREES ON CANDIDATES

### BACHELORS OF ARTS
### BACHELORS OF ENGINEERING SCIENCE

*Presented by*

ALLYN W. KIMBALL
*Dean, Faculty of Arts and Sciences*

CONFERRING OF DEGREES ON CANDIDATES
*continued*

BACHELORS OF SCIENCE
BACHELORS OF SCIENCE IN ENGINEERING
MASTERS OF SCIENCE
MASTERS OF EDUCATION
MASTERS OF LIBERAL ARTS
CERTIFICATES OF ADVANCED STUDY IN EDUCATION

*Presented by*

RICHARD A. MUMMA
*Dean, Evening College*

* * *

MASTERS OF SCIENCE
DOCTORS OF SCIENCE
MASTERS OF PUBLIC HEALTH
DOCTORS OF PUBLIC HEALTH
DOCTORS OF PHILOSOPHY

*Presented by*

JOHN C. HUME
*Dean, School of Hygiene and Public Health*

* * *

MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

*Presented by*

FRANCIS O. WILCOX
*Dean, School of Advanced International Studies*

* * *

DOCTORS OF MEDICINE
MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

*Presented by*

DAVID E. ROGERS
*Dean, School of Medicine*

* * *

CONFERRING OF DEGREES ON CANDIDATES
*continued*

MASTERS OF SCIENCE IN ENGINEERING
MASTERS OF ARTS IN TEACHING
MASTERS OF ARTS
DOCTORS OF PHILOSOPHY

*Presented by*

ALLYN W. KIMBALL
*Dean, Faculty of Arts and Sciences*

* * *

REMARKS TO THE GRADUATES

LINCOLN GORDON
*President of the University*

*

BENEDICTION

*

RECESSIONAL

" FANFARE "

*Dideric Buxtehude*

*The audience is requested to remain standing after the Benediction until the members of the faculties and graduates have left the area.*

* * *

# AWARDS

## THE C. RICHARD MARTIN AWARD

in Political Economy for outstanding work by a first or second year graduate student

*Awarded to*

TSUNEO ISHIKAWA

## THE SARAH AND ADOLPH ROSEMAN ACHIEVEMENT AWARD

in Chemistry in recognition of outstanding accomplishment

*Awarded to*

ANDREW C. BACKUS

## THE JULIUS TURNER AWARD

for the best senior thesis in Political Science

*Awarded to*

DAVID B. REEVES

## THE DELTA SIGMA PI SCHOLARSHIP KEY

in the Division of Business of the Evening College for the highest average for the entire course

*Awarded to*

FRANCIS JOSEPH ANDREWS, JR.

## THE WALL STREET JOURNAL STUDENT ACHIEVEMENT AWARD

in the Division of Business of the Evening College for outstanding scholarship
and exceptional promise of future success

*Awarded to*

FRANCIS JOSEPH ANDREWS, JR.

## CITATIONS FOR HONORARY DEGREES

*Citation Read by*

DR. CARL F. CHRIST

*in Presenting*

GEORGE HEBERTON EVANS, JR.

*for the Degree of Doctor of Laws*

Mr. President, no university has been blessed with a more dedicated son than George Heberton Evans, Jr. He arrived at Johns Hopkins in 1916, the year the Homewood Campus was opened. Here he grew from freshman to Doctor of Philosophy, from instructor to professor. Here he served as department chairman for 18 years, and as the first and only Dean of the Faculty of Philosophy. As chairman, he attracted outstanding faculty and students to the Political Economy Department. During his seven years as Dean, his long-range vision, planning, and judgment were cornerstones of the University's development. His advice and counsel have served the University and its members well on many occasions.

His scholarly work over the years has deepened our knowledge of entrepreneurship and the corporate form of economic activity. He has devoted great care to his students, among whom are numbered two bank presidents and several of today's leading scholars in economics and economic history.

To all of his work he has brought high standards, absolute fairness, wisdom, and kindness. For fifty-four years he has given much to Johns Hopkins. Mr. President, it is most fitting that the University honor George Heberton Evans, Jr. with the degree of Doctor of Laws.

*Citation Read by*

DR. VERNON B. MOUNTCASTLE

*in Presenting*

WILDER PENFIELD

*for the Degree of Doctor of Laws*

Mr. President, Professor Wilder Penfield is a graduate of Princeton and Oxford Universities, a Rhodes scholar, a member of the class of 1918 of the School of Medicine of The Johns Hopkins University, and a student of Osler, Sherrington, and Cajal.

He single-handedly created and for three decades directed the finest institute of neurology and neurosurgery in the world. First among neurosurgeons, the teacher of the teachers of two of its generations, Penfield placed his own inimitable stamp upon a vital field of science, and of medicine. His students grace its chairs the world around. He charted brain geography, mapping the representation of motor and sensory functions in the cerebral cortex of man. His studies of the divine disease, epilepsy, contributed immeasurably to its adaquate treatment, and led him to important humanistic studies of the age of Hippocrates. His contributions to understanding the normal function of the human brain, especially its record of conscious experience, and towards an eventual solution of the mind-brain problem, stand as beacons to scientist, clinician, and philosopher alike.

Beyond that, The Johns Hopkins University wishes to honor Professor Penfield as a warm and sensitive human being, a great and gentle physician, one concerned throughout his long and productive life with the welfare of his fellow-man, and the philosophical wellsprings of the human condition. We salute him as a law-giver concerning the function of the brain, with an honorary degree of Doctor of Laws.

*Citation Read by*

DR. THOMAS B. TURNER

*in Presenting*

CURT PAUL RICHTER

*for the Degree of Doctor of Laws*

Mr. President, I have the honor to present for the degree of Doctor of Laws, Curt Paul Richter, distinguished Johns Hopkins professor, imaginative investigator of human behavior, and enlightened humanist.

Curt Richter was born in Denver but received his early education in Dresden, in the rigorous intellectual tradition of the old Germany. Following degrees from Harvard and Johns Hopkins, he began a remarkable research career in what was then a new science, psychobiology. For some fifty years, using the Phipps Clinic of the Johns Hopkins Medical Institutions as a base, he has conducted free-ranging investigations linking physiological and mental processes. His research on periodic variations in biological mechanisms has led to a classical monograph on "Biological Clocks in Medicine and Psychiatry." Experiments on selection of foods by laboratory animals have provided new insights into problems of human nutrition.

His honors include membership in the National Academy of Sciences, an honorary degree from the University of Chicago, and designation as Distinguished Citizen of Denver in 1958. He continues to be scientifically productive.

Mr. President, it is a singular pleasure to present to you for this honorary degree one of Johns Hopkins' most illustrious scientists—Curt P. Richter.

*Citation Read by*

DR. JAMES D. EBERT

*in Presenting*

BENJAMIN HARRISON WILLIER

*for the Degree of Doctor of Laws*

Mr. President, I have the honor to present to you for the degree of Doctor of Laws, my teacher, Benjamin Harrison Willier, pioneering and gifted experimentalist, rigorous yet fairest of critics, warm friend and inspiring teacher of embryologists, Henry Walters Professor and Chairman of the Department of Biology of this University for nearly two decades, currently Professor Emeritus—and devoted student of the embryo.

Of all the areas of biology, none is more challenging than the realm of embryonic differentiation, and within this territory he has, for over fifty years, been exploring the mechanisms whereby there emerge from a single-celled beginning, integrated multicellularity, diversified tissues, organismic wholeness. "Development" is the unifying theme in his life: development not only of the embryo, but also of his science, of the University, of his department, of his students. He will be remembered not only for his analytic approach and creative syntheses in embryology and development genetics, but also for his decisive leadership in the growth of the biological sciences within the University and in the maturation of his students and "scientific grandchildren," through whom the rich heritage of Whitman, Lillie, and Willier is alive in classrooms and laboratories across the nation.

Mr. President, we recognize in Professor Willier the spirit of the University's beginnings in graduate education and the epitome of her contemporary vitality.

*Citation Read by*

DR. FRANCIS O. WILCOX

*in Presenting*

CLIFTON R. WHARTON, JR.

*for the Degree of Doctor of Laws*

Mr. President, in my ten years as Dean of the School of Advanced International Studies, it has been my privilege to present a goodly number of outstanding individuals to the President of this University for honorary degrees. None has given me greater pleasure than the presentation I make to you today.

In this distinguished gathering, I hesitate to refer to Clifton Wharton as a "whiz kid." In an academic atmosphere where postdoctoral students abound, that may sound a bit undignified. The fact remains that at the tender age of forty-three he is a world-recognized expert on the economics of poverty and development and has just taken over the presidency of one of the largest universities in America—Michigan State.

An able administrator, teacher, researcher, and author, Dr. Wharton has devoted his efforts and intellect throughout his successful career to solving the problems of economic and agricultural growth in the developing nations.

Son of America's first Negro career diplomat, the honorable Clifton Wharton, Sr., who served as ambassador to Norway and Rumania, Dr. Wharton entered Harvard at sixteen. While an undergraduate, he demonstrated his leadership ability and was founder and first national secretary of the U. S. National Student Association.

In 1948, he received his M. A. in international studies from the School of Advanced International Studies. He continues today to serve the School and Johns Hopkins as a valued member of the SAIS Advisory Council. He worked for five years with the American International Association for Economic and Social Development, specializing on the problems of Latin America. Later he became a research associate on technical assistance at the University of Chicago. While there, he earned his M. A. in 1956 and his Ph. D. in 1958 in the field of economics. Upon joining the Agricultural Development Council, where he served as vice president, he spent six years in Malaysia teaching and working on the Council's program in Thailand, Vietnam, and Cambodia. In 1966, he was a member of President Johnson's Task Force on Agriculture in Vietnam, and last summer he served as the agronomist on the Presidential mission to Latin America with Governor Rockefeller.

Dr. Wharton's career has marked him as one of the truly able young men of his time—a high achiever who continually pursues his ethic of service to others. Despite the serious difficulties which beset our country today, when I see men like Cliff Wharton I have great confidence in the future of America.

We recognize him today for these past achievements and for the new and higher levels of distinction he will reach in his newest undertaking as President of Michigan State University. Those of us who are privileged to know him well are endeared of his warm manner, incisive mind, and constant concern that the powers of one's intellect and one's country be used to solve the ills of mankind. It is for me both a personal privilege and an honor to present to you for the degree of Doctor of Laws our distinguished alumnus, Clifton R. Wharton, Jr.

## THE UNIVERSITY MACE

The University Mace carried by the Chief Marshal, Professor Carl F. Christ, was first used at the 1954 Commemoration Day Exercises. Eight symbols are hand wrought in sterling silver on an ebony staff. The symbols represent man's cultural development from ancient times, through the Middle Ages and the Renaissance, to the modern era.

## THE PRESIDENTIAL INSIGNIA

University President Lincoln Gordon is wearing the Presidential Insignia signifying the authority vested in the President by the Board of Trustees. It is a chain of sterling silver links worn around the neck. Portraits of each of the nine Johns Hopkins University presidents are engraved on the faces of nine of the links. On the reverse are engraved the names and dates of office of each President. Eleven blank links for future use are included. The University Seal completes the design.

## ACADEMIC DRESS

The custom of wearing academic dress stems from the Middle Ages, when scholars were also clerics and wore the costume of their monastic order. The hood was originally a cowl attached to the gown, which could be slipped over the head for warmth. The cap, originally round, later became the square mortar-board as we see it today.

Today the cap is the same for all American degrees, although the recipient of a doctoral degree is entitled to wear a gold tassel. The gown varies for the respective degrees. The Bachelor's gown is worn closed and can be distinguished by its long, pointed sleeves. The Master's gown is designed to be open with the arms worn through the slits in the elbows of the sleeves. The Doctor's gown, also worn open, has full, bell-shaped sleeves with three horizontal bars stitched across the upper arm. There is a velvet panel draped around the neck and stitched down the front edges. This velvet trimming may be either black or the same color as the velvet border of the hood.

The hood also varies for the respective degrees. The Bachelor's and Master's hoods are of the same design, pointed at the base. The Bachelor's hood is three feet long; the Master's hood is three and one half feet long. The Doctor's hood is four feet long, of fuller shape and rounded at the base.

The hood is bordered with velvet, the color of which indicates the field of study in which the degree was earned:

*Dark blue — Philosophy*
*Light blue — Education*
*Orange — Engineering*
*Gold-yellow — Science*
*Green — Medicine*
*Salmon pink — Public Health*
*Pink — Music*
*Purple — Laws*
*White — Arts and Letters*

The silk lining of the hood represents the institution which granted the degree. If more than one degree is held, the gown and hood of the higher or highest degree is worn. The Johns Hopkins University has adopted an alternative costume to be used by all holding Johns Hopkins doctoral degrees, both earned and honorary. The costume will consist of a gold robe with front and side panels in sable velvet and a six-sided Dutch academic cap with gold sweatband and tassel. The linings seen in today's academic procession may include:

Black, old gold chevron — Johns Hopkins
Light blue, white chevron — Columbia
Dark blue — Yale
Blue with white chevron — Duke
Dark blue, two orange chevrons — Illinois
Light blue, two white chevrons — North Carolina
Old gold, maroon chevron — Minnesota
Old gold — Iowa
Gold, blue chevron — California
Gold — Virginia
Purple, gold chevron — Northwestern
Purple — New York University
Bright red — Wisconsin
Plum, with scarlet — London
Maroon — Chicago
Crimson — Harvard
Carnelian, two white chevrons — Cornell
Cardinal — Stanford
Red, tri-chevron in center — Heidelberg
Dandelion yellow — Michigan
Maize, azure blue chevron — Sorbonne
Yellow and white — Rochester

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## THE UNIVERSITY ODE

Truth guide our University
And from all error keep her free;
Let Wisdom yield her choicest treasure,
And Freedom reach her fullest measure;
Oh, let her watchword ever be
The truth of God will make you free,
Will make you free!

## THE UNIVERSITY MOTTO

Veritas vos liberabit.

The truth shall make you free.

—*St. John 8:32*

## PHI BETA KAPPA

Members Elected in 1969-70

DWIGHT C. ALPERN
ERNST BALTENSPERGER
JAMES S. BARE
OTIS RUDOLF BLAUMANIS
DAVID W. BOSTED
WILLIAM J. BRISK
WILLIAM ELLIOTT BUTLER
STEVEN L. CONVERSE
ARNOLD LEE DELLON
ANTHONY LEROY DENT
JAMES R. DEVRIES
GARY R. DIAMOND
JERROLD JAY ELLNER
EDWARD JOEL FEINGLASS
ALEX J. FEINGOLD
GREGORY W. FRUCHT
PETER E. GALLERSTEIN
THOMAS G. GIPSON
FREDERICK L. HALEY
DAVID S. HOOPER
DAVID L. HUSTON
GEORGE INANA
CHARLES ROBERT INNERS
DAVID R. IRVIN
ROBERT JEFFREY JOHNSON
KENNETH GEORGE KAY
WILLIAM T. KELLY
PETER ROBERT KOLCHIN
RICHARD A. KRANTZ
MICHAEL JOSEPH KUHAR
MARTIN G. LARRABEE
DONALD Y. LEUNG
HAROLD CLAYTON LIVESAY
ROBERT R. LOVE
ANDREW JOHN LYNCH
CARL W. MARGRABE, JR.
JESSE S. MASHBAUM
EDMUND E. MILLER
LUCILLE ANN MOSTELLO
CARL F. MYERS
WILLIAM LOUIS NEUMANN
CHARLES ALLEN PADGETT
IRA M. PARIS
WINIFRED BERNER PARKER
HARVEY I. PASS
PAUL M. PELLICCI
KRIS D. POLASKI
PATRICK GLENN PORTER
HUGH DONALD RATLIFF
RALPH H. REESE
TERRY ALAN REICHELDERFER
RICHARD S. SACHER
HEYWOOD T. SANDERS
ROBERT M. SCAVONE
ALLEN HESS SCHAEFFER
JEFFREY A. SCHOENBLUM
MICHAEL J. SINGER
GRETCHEN CHENEY SOUTHARD
GREGORY B. STOCK
PETER DARCY TANNOCK
RUSSELL H. TAYLOR
WILLIAM T. VAN DOREN
PAUL A. WATKINS
ROBERT B. WEISMAN
CHARLES W. WRIGHTSON
HUGH HOWARD YOUNG

## TAU BETA PI

The following graduating seniors are members of the Tau Beta Pi Association—the National Engineering Honor Society.

JOHN ELDEN CLECKNER
MICHAEL ANTHONY CUNEO
DWIGHT DAVID DANIEL
GREGORY WAYNE GOELLER
DAVID LLOYD HUSTON
DAVID RAND IRVIN
CARL FRANKLIN MYERS, JR.
MICHAEL HUGH PARKER
EDWARD BERNARD RAGONESE
DANIEL LEACH RALEY
RICHARD STEVEN SACHER
LAWRENCE ROBERT SNYDER
RUSSELL HIGHSMITH TAYLOR
ALLAN MARK TREGIDGA

# CANDIDATES FOR DEGREES

As of May 15, 1970

## BACHELORS OF ARTS

### in the Faculty of Arts and Sciences

Otis Francis Abbott, of Houston, Texas
John Alfred Adams, of Schenectady, N. Y.
Walter Arthur Albro, Jr., of Forest Hill, Md.
Paul Alfred Allen, of New Canaan, Conn.
Dwight Cooper Alpern, of Detroit, Mich.
Michael Robert Anastasio, of Forest Heights, Md.
Bruce Erroll Andrews, of Cheverly, Md.
Michael Ray Arietti, of Enfield, Conn.
Robert Wynn Astles, of Covington, Ky.
Peter Hess Augenblick, of New Hope, Pa.
Jose Antonio Bardelas, Jr., of Freeport, Ill.
James Stanton Bare, of Center Valley, Pa.
Alfred Wald Barry III, of Baltimore, Md.
Cliff James Barton, of Baltimore, Md.
Patrick Gibson Beatty, of Ashton, Md.
James W. Beers, of Timonium, Md.
Ira Joseph Berman, of Baltimore, Md.
Joseph Gilbert Billings, of Odenton, Md.
Richard Allen Billows, of Garden City, N. Y.
Nelson Edwin Bingham, of Cape May Court House, N. J.
Brady Brent Black, of Lookout Heights, Ky.
Lucas Juan Blanco, of San Juan, P. R.
Stephen Arthur Blumenthal, of West Orange, N. J.
John Doughty Bonvillian, of Wilton, Conn.
James Hammerlee Borland III, of Franklin, Pa.
Kenneth Michael Borow, of Merion Station, Pa.
Paul Howard Borsuk, of Madison, Wis.
David William Bosted, of Wyckoff, N. J.
Matthew Stephen Bottkol, of South Hadley, Mass.
Kenneth William Bowers, of Baltimore, Md.
David Ezra Brainerd III, of Glen Ellyn, Ill.
Donald Ralph Bridges, of Woodstock, Md.
Abbot Alan Bronstein, of Great Neck, N. Y.
Joseph J. Brophy, of White Plains, N. Y.
Kenneth Maxwell Brown, of Hempstead, N. Y.
Stephen G. Brown, of Pelham, N. Y.
James L. Broyles, of Baltimore, Md.
Robert Lee Buchanan, of Hockessin, Del.
Robert Charles Buscher, of Quincy, Mass.
Joseph Henry Butterfield, of Holyoke, Mass.
Laurence S. Campbell, of Darien, Conn.
Robert Clarke Castelle, of Cumberland, Md.
Ronald Michael Castonguay, of Little Ferry, N. J.
Claude Gabriel Cech, of Rumsey Island, Md.
William Rhodes Charyk, of Washington, D. C.
Joseph Litvin Chess, of Havertown, Pa.
Jeffrey Allen Chlebnikow, of Hagerstown, Md.
James Merryman Christhilf, of Ruxton, Md.
Forrest Glen Chumley, of Dundalk, Md.
Stephen Joseph Clark, of Oxon Hill, Md.
Charles Samuel Coker, of Edgewater, Md.
Thomas Amor Cole, of Drexel Hill, Pa.
Lawrence Bruce Coleman, of Baltimore, Md.
Donald Bruce Connelly, of Baltimore, Md.
Nelson Cover, Jr., of Towson, Md.
William T. Cox, of Madison, Wis.
John Michael Crabbs, of Hanover, Pa.
John Peter Crumrine, of Beaver, Pa.
William Arthur d'Alelio, of South Bend, Ind.
James Philip Danaher, Jr., of Grosse Pointe, Mich.
George Eugene Darby, of Perry Point, Md.
James Gay Davis, of Harpers Ferry, W. Va.
Merrill Lawrence Davis, of Minneapolis, Minn.
Kenneth Thomas De Luca, of Springfield, Pa.
David Carr Denise, of Princeton, N. J.
James Robert DeVries, of Lansing, Ill.
Gary Richard Diamond, of Ardmore, Pa.
Martin Joseph DiCarlantonio, of Mt. Ephraim, N. J.
Michael DiMaio, Jr., of Providence, R. I.
Steve Mark Dinerstein, of New York, N. Y.
Timothy Albert Ditzler, of Chevy Chase, Md.
Paul Victor Dorrett, of Baltimore, Md.
Richard Lee Dorsey, of Baltimore, Md.
Brice Gordon Dowell, of Timonium, Md.
Marc A. Dowlen, of Long Beach, Calif.
Robert Patrick Dowling, of St. James, N. Y.
George Gregory Doykos, of Fort Lee, N. J.
Bruce Drake, of East Rockaway, N. Y.
Charles G. Durbin, Jr., of College Park, Md.
Marc Steven Dworkin, of Worcester, Mass.
Wilfred Montague Dyer III, of Clinton, Md.
Paul Bradford Eaglin, of Fayetteville, N. C.
Richard Michael Eaton, of Bernardsville, N. J.
John Robert Eckard, Jr., of Westminster, Md.
Winfield Dow Edgerton III, of Davenport, Iowa
Rodney Darwin Edwards, Jr., of Livonia, Mich.
Douglas Hale Eldridge, of Washington, D. C.
Peter Eltz, of Peapack, N. J.

Steven Walton Ernst, of London, England
Timothy Howard Eskridge, of Baltimore, Md.
Gregory Wayne Evans, of Scottsdale, Ariz.
Ted Faiin, of Atlanta, Ga.
Charles Samuel Fax, of Pittsburgh, Pa.
Robert Louis Feldman, of Perth Amboy, N. J.
Seth Robert Feldman, of Long Beach, N. Y.
Charles Eugene Fenton, of Seabrook, Md.
Paul Kenneth Fessler, of Washington, D. C.
Mark Kendall Fleeharty, of Washington, D. C.
Stewart Raymond Fogel, of Manhasset Hills, N. Y.
James Howard Forer, of Trenton, N. J.
Charles Adley Forscher, of Lido Beach, N. Y.
Nancy Elizabeth Frasure, of Slingerlands, N. Y.
Andrew Schugler Frazier, of Winchester, Mass.
Wesley Charles Fredericks, Jr., of Kinnelon, N. J.
Gregory W. Frucht, of Closter, N. J.
Bennett Gilbert Gaines, of Baltimore, Md.
Peter Eric Gallerstein, of New York, N. Y.
Philip Parkhurst Gardiner, of Jacksonville, Fla.
Joshua Neil Geberer, of Hewlett, N. Y.
Paul Charles Geimer, of Highland Park, Ill.
Harold Milton Gessner, of New York, N. Y.
Luciano Marcello Giampa, of Niagara Falls, N. Y.
David Allen Gibson, of Baltimore, Md.
Thomas Grady Gipson, of Mechanicsburg, Pa.
Ted Donald Girdner, of Randallstown, Md.
Jonathan Frederick Globig, of St. Louis, Mo.
James Carter Glynn, of Manhasset, N. Y.
Robert Cooke Goolrick, of Lexington, Va.
John Frederick Gorczyk, of Huntington, N. Y.
Harold Fornoff Gracey, Jr., of Baltimore, Md.
Phillip Patrick Gray, of Baltimore, Md.
Lyman Bowen Greaves, Jr., of Williamsport, Pa.
Paul Alan Green, of Barton, Md.
Gary Howard Greenberg, of Lawrence, N. Y.
Nathaniel Stephen Greenwood, of Philadelphia, Pa.
Zane Oliver Gresham, of Biloxi, Miss.
Peter Elijah Griffin, of Penonomé, Cocle, Rep. of Panama
David Jack Gross, of East Meadow, N. Y.
Martin Edward Gurtz, of Adelphia, Md.
John Redway Hammond, of Annapolis, Md.
Richard Hammond, of Newton, Mass.
Jack Warren Hanemann, Jr., of Mahtomedi, Minn.
Peter Jonathan Harnik, of New York, N. Y.
Lawrence Michael Hauptman, of Roslyn Heights, N. Y.
James McComb Hayward, of Montclair, N. J.
Stephen Palmer Heagerty, of Catonsville, Md.
Philip Heagney, of St. Louis, Mo.
Lee Ira Hecht, of Valley Stream, N. Y.
Abraham Hertzberg, of Baltimore, Md.
Russel A. Herz, of New York, N. Y.
Thomas Duncan Hess, of Baltimore, Md.
Walter Bliss Hettinger, of Baltimore, Md.
David S. Hoelscher, of Pittsburgh, Pa.
Arthur M. Hoffman, of Highland Park, N. J.
Richard Alan Hoffman, of Philadelphia, Pa.
Robert Warren Holland, of Catonsville, Md.
Richard Saul Hollander, of Scarsdale, N. Y.
Robin Jordan Holt, of Baltimore, Md.
Charles J. Homcy, of West Patterson, N. J.
Douglas Scott Honig, of Manhasset, N. Y.
David Stephen Hooper, of Kalamazoo, Mich.
Donald Ralph Hope, of Stamford, Conn.
Donald Stanley Horner, of Baltimore, Md.
David James Houck, Jr., of Long Green, Md.
William Martin Howdon, of Baltimore, Md.
David Yan-Chi Hsia, of Vancouver, B. C.
Harry Frazer Hull, of Mt. Lebanon, Pa.
Richard Kevin Hunt, of Dedham, Mass.
Martin Elliot Hurwitz, of Lancaster, Pa.
Michael Scott Hutcheson, of Annandale, Va.
Robert Nelson Hyde III, of Minneapolis, Minn.
George Inana, of Tokyo, Japan
Paul Stephen Ing, of Odenton, Md.
Paul Jeffrey Isaacson, of Bethesda, Md.
Ronald Alan Jackson, of North Versailles, Pa.
Alan Francis Javel, of Hillside, N. J.
David Raymond Jenkins, of Baltimore, Md.
James Robert Johnson, of Moorestown, N. J.
Robert Jeffrey Johnson, of Berkeley Heights, N. J.
Stuart Reid Kahl, of Baltimore, Md.
Peter Andrew Kahn, of Mt. Vernon, N. Y.
Lanz D'Elia Karfgin, of Baltimore, Md.
David Joseph Kasik, of Denver, Colo.
William Thomas Kelly, of Raleigh, N. C.
James Paul Keogh, of Washington, D. C.
Daniel Joseph Kerley, Jr., of Pelham Manor, N. Y.
George Henry Kirschbaum, of Wolcott, Conn.
John Arnold Knapp II, of Tenafly, N. J.
David Stanley Komocki, of Cleveland, Ohio
Andrew Robert Kosloff, of West Englewood, N. J.
George Robert Kracke, of Bel Air, Md.
Richard Alan Krantz, of Lincoln, Nebr.
Ulrich Hanns Kretzschmar, of Reston, Va.
Elliot Ross Krieger, of West Orange, N. J.
Steven Thomas Kuhn, of Aberdeen, Md.
Warren Scott Kurnick, of Philadelphia, Pa.
George Lach, of Baltimore, Md.
William St. John LaCorte, of Crawford, N. J.
Stephen Lai, of North Haledon, N. J.
Joseph Landowne, of Weston, Mass.
William Theodore Larew, Jr., of Plainfield, N. J.
Stephen Willits Latson, of Garden City, N. Y.
Eileen Lefkowski, of Carteret, N. J.
Mark Edwin LeMar, of Trumbull, Conn.
Walter Johnson Lentz, of Baltimore, Md.
Stephen Paul Lessa, of Wakefield, Mass.
Donald Yap Man Leung, of Roslyn Harbor, N. Y.
Steven Alan Levenson, of Pikesville, Md.
David Harold Levien, of New York, N. Y.
Warren J. Levy, of Haddonfield, N. J.

Howard Bernard Libauer, of Baltimore, Md.
Richard Stuart Lieberman, of Bethesda, Md.
Lawrence Joseph Lippolis, Jr., of Suitland, Md.
Robert Theodore Livernash, of Cambridge, Mass.
Stephen C. Lloyd, of Baltimore, Md.
John Goodwin Locke, IV, of Great Falls, Va.
Samuel Moore Logan, of San Francisco, Calif.
Henry Reed Longnecker, of Paoli, Pa.
James G. Lotto, of Uniondale, N. Y.
Robert Russell Love, of Lonaconing, Md.
Andrew John Lynch, of Braintree, Mass.
Robert Allen MacCool, of Baltimore, Md.
Joseph Richard Magliozzi, of Rochester, N. Y.
Glenn Barnet Marcus, of Baltimore, Md.
Carl W. Margrabe, Jr., of Brunswick, Md.
J. Edward Marra, of Cohoes, N. Y.
Robert John Marro, of Secaucus, N. J.
John Jeffrey Marron, of Davenport, Iowa
Case Henry Marsh, of Elicott City, Md.
Eugene Lloyd Marsh, Jr., of Council Bluffs, Iowa
Jesse Stephen Mashbaum, of Randallstown, Md.
James Northrup May, of Summit, N. J.
Patrick Ralph McClintock, of Schenectady, N. Y.
Randall Pierce McCormick, of Willoughby, Ohio
William David McDonough, of Madison, N. J.
Peter Vincent McGinn, of West Hempstead, N. Y.
John Bernard McKeon, of Ridgefield, Conn.
Gregory James Mertz, of Hinsdale, Ill.
Douglas Irving Miles, of Baltimore, Md.
Edmund Eugene Miller, of Massapequa Park, N. Y.
George Harold Miller, of Falls Church, Va.
Kenneth Bruce Miller, of Little Silver, N. J.
Rockley Loren Miller, of Arlington, Va.
Walter Thomas Milliner, Jr., of Rockville, Md.
Brian Jeffery Mohler, of Schenectady, N. Y.
David Hunkele Moore, of Livingston, N. J.
John Russell Moore, of Mineola, N. Y.
Michael Charles Morgan, of Rockville, Md.
Daniel Hervé Morneau, of Gardiner, Maine
William Gilbert Morris, of Richmond, Va.
John Vincent Moulden, of Takoma Park, Md.
** John Stourton Mowbray, of New York, N. Y.
John Michael Myers, of Severna Park, Md.
Stephen Lee Myers, of Birmingham, Mich.
Richard Boydston North, of Summit, N. J.
James Stanley Novick, of Maplewood, N. J.
Gerard Berlage Odell, of Baltimore, Md.
Christopher Dean Olander, of Chicago, Ill.
David Lee Olds, of Conneaut, Ohio
Stephen R. Ollove, of Bangor, Maine
Philip Lawrence Olsen, of Silver Spring, Md.
Thomas Joseph O'Toole, Jr., of Westwood, Mass.
Charles Allen Padgett, of Baltimore, Md.
Samuel William Pagano, of Glen Rock, N. J.
Jeffrey Dent Parker, of Washington, D. C.
William Davis Parker, Jr., of Sarasota, Fla.
Harvey Ira Pass, of Baltimore, Md.
Russell Smith Passarella, of Plainfield, N. J.
Kenneth Michael Petersen, of Albertson, N. Y.
Glenn Richard Peterson, of Glenside, Pa.
Ronald Richard Peterson, of Edison, N. J.
Thien Toan Pham, of Saigon, Vietnam
Geoffrey Louis Phelan, of New Castle, Pa.
Joseph August Pika III, of Fallston, Md.
Patrick Milton Pilachowski, of Baltimore, Md.
William Douglas Piotrowski, of South Plainfield, N. J.
William George Preston, of Englewood, N. J.
Raymond William Price, of Midland, Texas
Richard James Price, of Cleveland, Ohio
John Stephen Racii, of Baltimore, Md.
Kenneth Mark Rackow, of Montrose, N. Y.
David Bromley Reeves, of San Francisco, Calif.
Terry Alan Reichelderfer, of Harrisonburg, Va.
Harvey Reisine, of Brooklyn, N. Y.
Warren Kurt Reiss, of Cincinnati, Ohio
Ronald Allan Remick, of Dayton, Ohio
Howard Joseph Riley, of Cape May, N. J.
David E. Roberts, of Annapolis, Md.
Manuel Rodriguez-Orellana, of Hato Rey, P. R.
Wayne Wells Rogers, of Cape Elizabeth, Maine
Peter Marc Rosenberg, of West Orange, N. J.
Paul David Rosenblum, of New York, N. Y.
Daniel Gene Rosenfeld, of Wynnewood, Pa.
John Thomas Rosenthal, of Norfolk, Va.
Charles Mason Ross, of Friendsville, Md.
Michael Lee Ross, of Oakhurst, N. J.
Manfred Sheldon Rothstein, of Owings Mills, Md.
Ralph Kenneth Rothwell, Jr., of Elkton, Md.
Allen Thomas Rubeo, of Scarsdale, N. Y.
David Nathaniel Ruchman, of Phoenix, Ariz.
Anthony Todd Ruger, of Northport, N. Y.
Thomas A. Ryer, of Cresskill, N. J.
Richard Steven Sacher, of Baltimore, Md.
Heywood Tishler Sanders, of Rockville, Md.
Thomas Stanley Sandler, of Rockville, Md.
Leon Aram Saryan, of Wilmington, Del.
Edward William Schaefer, Jr., of Washington, D. C.
Allen Hess Schaeffer, of Nitro, W. Va.
Gary Neal Schaible, of Roselle, N. J.
Robert Mark Scher, of New York, N. Y.
John Thomas Schlotterbeck, of Lynchburg, Va.
Karl Ritchie Schlotterbeck, of Hagerstown, Md.
David Abbott Schneiderman, of New York, N. Y.
Jay Donald Schoenau, of Cary, Ill.
Jeffry Alan Schoenblum, of Forest Hills, N. Y.
Robert Michael Schreiber, of Albany, N. Y.
Michael Howard Schwartz, of Baltimore, Md.
Paul Schwartz, of Baltimore, Md.
John Rufus Scott, of Wellsville, N. Y.
Carl Alva Seacat, of Phoenix, Ariz.

** Posthumously.

David Linton Searles, of Cumberland, Md.
Charles Morgan Seeger III, of Upper Marlboro, Md.
Laurence Shatkin, of Little Silver, N. J.
Dan Peter Sheer, of Island Park, N. Y.
Stuart Allen Sheldon, of Bethesda, Md.
Judd Ernest Shellito, of Wichita, Kans.
Lawrence Martin Shotland, of Silver Spring, Md.
Dale McClure Simpson, of Memphis, Tenn.
Michael Jay Singer, of Silver Spring, Md.
Andrew Philip Siwulec, of Waldwick, N. J.
John Thomas Slevin, of Parkersburg, W. Va.
Robert Jeffery Sloan, of Pitman, N. J.
Francis Sherbert Smith, of Washington, D. C.
Malcolm M. Smith, of Rochester, N. Y.
Raymond Walter Snow, of Adelphi, Md.
Henry Leo Sonneborn, of Scarsdale, N. Y.
Howard Barney Stevens, of Summit, N. J.
William Edward Stevenson III, of Baltimore, Md.
James Edgar Stewart, of Chicago, Ill.
Gary Wayne Stokes, of Sharptown, Md.
Michael Charles Stone, of Croton-on-Hudson, N. Y.
Harry Gregory Stumpf, of Washington, D. C.
Charles Loveland Swanbeck, of Staunton, Va.
Robert John Swanton, of Somerset, N. J.
Charles Raymond Swart III, of Levittown, N. Y.
Brian Tang, of New York, N. Y.
Eric Keith Tarlow, of Verona, N. J.
Curtis Lee Tarnoff, of Springfield, Pa.
John Fredrick Tarquinio, of Wayne, Pa.
Robert Carter Tate, of Annapolis, Md.
Peter Stuart Tell, of Teaneck, N. J.
John William Testa, of Cumberland, Md.
Richard Lindsley Thielke, of Sitka, Alaska
Geoffrey Hamilton Thomas, of Chuckatuck, Va.
Robert Samuel Tigner, of Vienna, Va.
Richard Craig Tobey, of Ramsey, N. J.
Bruce Neil Troup, of Baltimore, Md.
Bradley Thomas Truax, of Buffalo, N. Y.
John Arthur Tuominen, of Huntington Station, N. Y.
Brian Phillips Turner, of Washington, D. C.
Eric Haynes Twerdahl, of Barrington, Ill.
Steven Goldsborough Tyler, of Cambridge, Md.
John Patrick Tyrrell, of Darien, Conn.
John Guy Ullman, of Merrick, N. Y.
Joseph John Valdrini, of Hockessin, Del.
William Theodore Van Doren III, of Chuckatuck, Va.
Paul Vincent Volenik, of Salisbury, Md.
Alan Stuart Walker, of Cedarhurst, N. Y.
George Bradford Wallace, of Randallstown, Md.
Richard Alan Ware, of Wauwatosa, Wis.
Robert David Water, of University Heights, Ohio
Robert Giles Wendland, of Baltimore, Md.
William Karl Wilburn, of Fort Worth, Texas
John Charles Wilkin, of Phoenix, Md.
Barbara Jean Williams, of North Kansas City, Mo.
Hugh F. Wilson, of Chicago, Ill.
James Andrew Winship, of Canandaigua, N. Y.
James Lloyd Winter, of Rye, N. Y.
Charles Austin Winternitz, of Mendham, N. J.
Mark Paul Wise, of Emporia, Kansas
David Witt III, of Baltimore, Md.
Joseph Crawford Wolfkill II, of Baltimore, Md.
Charles Uncles Wood, Jr., of Baltimore, Md.
Richard Denton Wray, of Springfield, Pa.
Eric Ellsworth Wright, of Lebanon, N. H.
Charles William Wrightson, Jr., of Phoenix, Md.
Edward Joseph Yelinek, of Hagerstown, Md.
Hugh Howard Young, of Birmingham, Ala.
Lawrence Etheridge Young, of Fairfax, Va.
Joseph W. Zebley III, of Baltimore, Md.
Joel Fredric Ziskin III, of Boulder, Colo.
Robert Charles Zubritsky, of Harrisburg, Pa.

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## BACHELORS OF ENGINEERING SCIENCE

### in the Faculty of Arts and Sciences

Philip Steven Alexander, of Bowie, Md.
Steven Aust, of Baltimore, Md.
James Craig Battis, of Wethersfield, Conn.
Gregory Donn Brown, of Baltimore, Md.
John Elden Cleckner, of Falls Church, Va.
John Paul Clisham, of White Marsh, Md.
Michael Anthony Cuneo, of Towson, Md.
Dwight David Daniel, of Severn, Md.
David Vernon Denison, of Dundalk, Md.
Richard William Dillman, of Wellsboro, Pa.
Thomas Earl Drake, of Williamsport, Md.
Valiant Dzwonczyk, of Baltimore, Md.
Anthony Terry Easton, of Towson, Md.
Robert William Eby, Jr., of Severna Park, Md.
Robert Howard Fisher, of Owings Mills, Md.
Alan Roy Fusfeld, of Stamford, Conn.
Stanislaw Paul Gembicki, of Baltimore, Md.
William Joseph Gill, of Bladensburg, Md.
Gregory Wayne Goeller, of Baltimore, Md.
Richard David Guerin, of Baltimore, Md.
Joseph Marr Gwinn IV, of Weston, Mass.
James Earl Harper III, of Oxon Hill, Md.
Ronald Joseph Heflin, of Baltimore, Md.
Myron Spence Howard, of Baltimore, Md.

David Lloyd Huston, of Denver, Colo.
David Rand Irvin, of Baltimore, Md.
Leo Joseph Jackson, of Easton, Pa.
Nicholas Daniel Karbonik, of Baltimore, Md.
William David Kerns, of Grantsville, Md.
Michael Andrew Kolodny, of Greenbelt, Md.
David Carroll Kowalski, of Danvers, Mass.
Joseph Paul Lapinski, of Schenectady, N. Y.
Stanley Alois Link, of Baltimore, Md.
Ronald Edward Lipinski, of Baltimore, Md.
James Ward Mastropole, of Saddle River, N. J.
Thomas Austin Longley McCurdy, of Honolulu, Hawaii
Charles Baxter McLaughlin, Jr., of Catonsville, Md.
Joseph Michael Millstone, of Baltimore, Md.
Carl Franklin Myers, Jr., of Cheverly, Md.
Guive Nabet, of Tehran, Iran
Joel Anthony Nachlas, of Baltimore, Md.
Steven Earl Naron, of Baltimore, Md.
Dennis Edmund O'Neill, of Baltimore, Md.
Michael Hugh Parker, of Kensington, Md.
Edward Bernard Ragonese, of Baltimore, Md.
Daniel Leach Raley, of Leonardtown, Md.
John Crumrine Rehner, of Westfield, N. J.
Raymond Lee Riley, of White Marsh, Md.
Charles Gregory Sarau, of Catonsville, Md.
Alfred David Sause, of Ellicott City, Md.
George Michael Schmidt III, of Towson, Md.
Joseph Thomas Scilipoti, of Baltimore, Md.
Kirk Allan Slenker, of Red Lion, Pa.
Lawrence Robert Snyder, of Baltimore, Md.
Michael E. Spurrier, of Baltimore, Md.
Chow Ang Tang, of Kuala Lumpur, Malaysia
Russell Highsmith Taylor, of Bethesda, Md.
Allan Mark Tregidga, of Silver Spring, Md.
Paul Erhardt Weiss, of Florissant, Mo.
Harvey Hudgings White, Jr., of Timonium, Md.
Amde M. Wolde-Tinsae, of Addis Ababa, Ethiopia
David Crane Woodruff, of Baltimore, Md.

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## BACHELORS OF SCIENCE

### in The Evening College

Ronald Louis Adezio, of Baltimore, Md.
Donald Charles Alexander, of Bel Air, Md.
Anna Christine Alt, of Philadelphia, Pa.
Charles John Anderson, of Baltimore, Md.
Francis Joseph Andrews, Jr., of Reisterstown, Md.
Gerald Azriel Backman, of Baltimore, Md.
Barbara Roysdon Barrett, of Baltimore, Md.
Maria Imrey Baumann, of Baltimore, Md.
John William Becker, of Woodbine, Md.
Neil Jay Bootii, of Baltimore, Md.
Paul Kenneth Bowen, Jr., of Timonium, Md.
Bonnie Sue Brandt, of Cockeysville, Md.
Edgar Weightman Brill, Jr., of Baltimore, Md.
George Joseph Brown, of Baltimore, Md.
Salome Somers Bryan, of Ambler, Pa.
Marian Butler, of Baltimore, Md.
Ronald Gardner Chopper, of Baltimore, Md.
Thomas Pat Christino, of Timonium, Md.
Lorraine Bowman Claggett, of Easton, Md.
Joan Patricia Clark, of Lutherville, Md.
Robert Eaton Compher, of Baltimore, Md.
Lawrence Joseph Craig, of Baltimore, Md.
Stanley Norvel Day, of Baltimore, Md.
John J. Dewaal, of Linthicum, Md.
Pieter deWit, of Baltimore, Md.
Nancy Tyler Drewer, of Salisbury, Md.
Berry Lee Drye, of Ellicott City, Md.
John Christopher Dumer, Jr., of Middle River, Md.
Theodore Roosevelt Eckrote, of Baltimore, Md.
David Leroy Esler, of Baltimore, Md.
Gladys Elisa Esler, of Baltimore, Md.
John Timothy Fagan, of Baltimore, Md.
Stanley Wilson Foust, of Baltimore, Md.
John Paul Funk, of Baltimore, Md.
Bette Myers Gemmill, of York Pa.
Robert McLane Gibson, of Joppa, Md.
Sidney Goldberg, of Baltimore, Md.
Charles John Gordon, of Baltimore, Md.
James Wallace Gracie, Jr., of Baltimore, Md.
Margaret J. Wolfe Griffiths, of Baltimore, Md.
Linda Ann Grue, of Baltimore, Md.
George Cedric Hartley, Jr., of Baltimore, Md.
Frederick Clement Hartmann, Jr., of Baltimore, Md.
Donna Schierbaum Hawk, of Baltimore, Md.
Louis Edward Haynie, of Pasadena, Md.
Charles Rife Hilgartner, of Baltimore, Md.
Ruth D. Hummel, of Baltimore, Md.
Lawrence Russell Jewell, of Baltimore, Md.
Jean Montgomery Johnson, of State College, Pa.
Silvia Frida Kamer, of Baltimore, Md.
Mary Elizabeth Kamphaus, of Baltimore, Md.
David Steven Katz, of Baltimore, Md.
Terry Norman Keller, of Baltimore, Md.
William Henry Kellogg, of Towson, Md.
Mary Swinson Kelly, of Baltimore, Md.
Thomas Eugene Killen, of Baltimore, Md.
John Leo Komber, of Baltimore, Md.
Leonard Joseph Kosatka, of Timonium, Md.

Fulton Albert Kramer, Jr., of Baltimore, Md.
Robert Willse Kyner, of Baltimore, Md.
Armand Errol Lasky, of New York, N. Y.
Harry Michael Lawson, of Baltimore, Md.
Thomas Lengal, of Baltimore, Md.
Gloria Epstein Lessing, of Baltimore, Md.
Marilyn Sandra Frank Levy, of Baltimore, Md.
Harry Lovell Loats, Jr., of Westminster, Md.
Michael Henry Luery, of Baltimore, Md.
Richard Roland Lytle, of Glen Burnie, Md.
Wayne Carter Mason, of Baltimore, Md.
Gaynel B. Smith McCann, of Bethesda, Md.
Marcia Ann McCord, of Baltimore, Md.
Jack Eugene Minnich, of York, Pa.
Robert Joseph Mooney, of Baltimore, Md.
Philip Gurdon Mumford II, of Baltimore, Md.
Thomas Oliver Murn, of Baltimore, Md.
Robert Joseph Murphy, of Bel Air, Md.
Richard William Murry, of Baltimore, Md.
John Joseph Myers, of Baltimore, Md.
John Ellsworth Peregoy, of York, Pa.
Edwin Hebden Perkins, Jr., of Baltimore, Md.
Nathan Polen, of Everett, Mass.
Adele Sinsky Propper, of Baltimore, Md.
Raymond Chester Przygocki, of Riverdale, Md.
Janet Enfield Pugh, of Ellicott City, Md.
Theodore Wayne Purser, of Odenton, Md.
Nancy Dietrich Rose, of Baltimore, Md.
Edward J. Sakalauskas, of Baltimore, Md.
Morris Nathan Saks, of Baltimore, Md.
Iraj Saleh, of Baltimore, Md.
Thomas Lyttleton Savin, of Baltimore, Md.
Margaret Marie Schaub, of Baltimore, Md.
Meir Schecter, of Baltimore, Md.
Glenda Allen Schmidt, of Baltimore, Md.
Alvin Charles Schneider III, of Glen Burnie, Md.
Leo Albert Schneider, of Forest Hill, Md.
Jacob Z. Schuster, of Baltimore, Md.
Angeline M. Searight, of Baltimore, Md.
Paul Milton Seiler, of Baltimore, Md.
Franklin William Shap, of Baltimore, Md.
Steven Charles Shap, of Baltimore, Md.
Dorothy Dante Sheybani, of Baltimore, Md.
Rengin Fatma Sirvanci, of Izmir, Turkey
Judith Ellen Sowell, of Baltimore, Md.
Richard Dwight Staedtler, of Reisterstown, Md.
Wayne E. Stoffel, of Crownsville, Md.
Harold Lee Swope, of Baltimore, Md.
Danny Abraham Taragin, of Baltimore, Md.
Joseph Douglas Taury, of Ellicott City, Md.
John Thomas Tschirhart, of Silver Spring, Md.
Earl William Van Horn, Jr., of Joppa, Md.
Elizabeth Salminen Volmer, of Joppa, Md.
William George Von Restorff, Jr., of Baltimore, Md.
Henry George Wagner, of Baltimore, Md.
William Bradley Weber, of La Crescenta, Calif.
Arnold Michael Weiner, of Baltimore, Md.
Marilyn Baumer Wells, of Timonium, Md.
Jeanne F. White, of New York, N. Y.
William Warren Whitescarver, of Baltimore, Md.
L. Benjamin Wilson, of Baltimore, Md.
Lee Herbert Wilson, of Baltimore, Md.
Roger Edgar Wolfe, of Burtonsville, Md.
Kenneth Edward Yinger, of York, Pa.
Pamela Perkins Young, of Baltimore, Md.
Theodore Zaleski, Jr., of Baltimore, Md.
David William Zehner, of Baltimore, Md.
Sharon L. Zervitz, of Baltimore, Md.
Albert J. Zidwick, of Baltimore, Md.

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## BACHELORS OF SCIENCE IN ENGINEERING

### in The Evening College

Giuseppe Anoia, of Baltimore, Md.
Frank Walter Antkowiak, of Baltimore, Md.
Herman Otto Audoersch, of Baltimore, Md.
James Thomas Bankard, Jr., of Baltimore, Md.
William Kenneth Barnes, of Baltimore, Md.
Melvin Charles Beall, of Arnold, Md.
Edward Walter Beaver, of Laurel, Md.
Kenneth Eugene Blob, of Reisterstown, Md.
Richard Leslie Bloom, of Baltimore, Md.
Michael Bowanko, Jr., of Glen Burnie, Md.
Danny Gene Boyd, of Glen Burnie, Md.
Craig Robert Bradenbaugh, of Towson, Md.
Uldis Buiva, of Baltimore, Md.
S. Frank Buono, of Laurel, Md.
Robert Luther Chester, of Whitehall, Md.
John Lewis Contic, of Baltimore, Md.
Nicholas Raymond Cullen, Jr., of Baltimore, Md.
Danny Bruce Counts, of Linthicum, Md.
Charles Joseph Crafton, of Baltimore, Md.
Ernest Joseph Czyryca, of Baltimore, Md.
Calvin Noell Damron, of Baltimore, Md.
Harold Allen Davis, of Towson, Md.
Stephen Carroll Dolbey, of Glen Burnie, Md.
William Franklin Dowling, of Kingsville, Md.
Ronald Holland Dunn, of Ellicott City, Md.
Edward Charles Ellis, Jr., of Laurel, Md.
Charles Cuttler Elly, of Baltimore, Md.
Carmen Ronald Fanzone, of Baltimore, Md.

Robert Arthur Farmer, of Bel Air, Md.
George Philip Fischer, of Dallastown, Pa.
Daniel Eugene Fisher, of Bowie, Md.
John Edward Fitzberger, of Baltimore, Md.
Ronald James Flower, of Baltimore, Md.
Gerald Eugene Ford, of Baltimore, Md.
Robert Frank Gartner, of Adelphia, Md.
John James Gawel, Jr., of Baltimore, Md.
Thomas L. Gibson, Jr., of Baltimore, Md.
Wayne Deforest Granger, Jr., of Baltimore, Md.
Donald John Greeley, of Timonium, Md.
Thomas Patrick Greene, Jr., of Baltimore, Md.
Richard Wesley Hall, Jr., of Denton, Md.
Wayne Pearle Hall, of Joppa, Md.
Wayne Owen Harris, of Baltimore, Md.
Donal Gene Hengst, of York, Pa.
James Joseph Honn, of Damascus, Md.
Carl Frederick Hornig, of Baltimore, Md.
Cornelius Joseph Hourihan, of Baltimore, Md.
Melvin Franklin Houston, of Holbrook, Pa.
Harry Madison Hutson, of Baltimore, Md.
Eric Osborne Israel, of Baltimore, Md.
Henry Joseph Janowitz, of Baltimore, Md.
Gary Evan Johnson, of Baltimore, Md.
Richard William Jones, of Sykesville, Md.
William A. Jordan, of Baltimore, Md.
Howard Roland Kelly, of Baltimore, Md.
Charles William Kilmon, of Baltimore, Md.
Norman Francis Kratfel, of Baltimore, Md.
Theodore Robert Kuchlewski, of Glen Burnie, Md.
Dennis H. LaFreniere, of Glen Burnie, Md.
Bernard Anthony Lapetina, of Baltimore, Md.
Bernard Joseph Layman, of Glen Burnie, Md.
Michael Peter Lisek, of Baltimore, Md.
Dale R. Logan, of Glen Burnie, Md.
Richard W. Mathews, of Glen Burnie, Md.
Robert Sherman McKeen, of Baltimore, Md.
Jeremiah Martin McNally, of Baltimore, Md.
Edwin Jon McQuigg, of Baltimore, Md.
Albert Alvin Moffat, of Berwyn Heights, Md.
Richard Morris, of Baltimore, Md.
Edward Joseph Odend'hal, of Baltimore, Md.
Leo John Ormanoski, of York, Pa.
Manning Francis Otradovec, of Baltimore, Md.
Charles Hyland Page III, of Baltimore, Md.
Robert Benjamin Palechek, of Gambrills, Md.
Robert P. Pasquale, of Baltimore, Md.
Jesse Howard Pence, Jr., of Glen Burnie, Md.
Edward Oliver Pollock, Jr., of Rockville, Md.
Daniel Raymond Rainville, of Baltimore, Md.
Benson T. Replogle, of Baltimore, Md.
Joseph Randolph Reynolds, Jr., of Annapolis, Md.
Robert Michael Reynolds, of Baltimore, Md.
Aern Evert Rider, of Manchester, Md.
S. James Roche, of Randallstown, Md.
Charles Howard Ronnenberg, of Baltimore, Md.
Charles Todd Rose, of York, Pa.
Francis Joseph Rosenthal, Jr., of Fork, Md.
Nelson Hugh Rucker, of Baltimore, Md.
James Dorsey Russell, Jr., of Ellicott City, Md.
Frederick Franklin Schaub, of Fallston, Md.
William M. Schell, of Baltimore, Md.
Charles Edward Schmidt, of Annapolis, Md.
Edward Joseph Schultz, Jr., of Baltimore, Md.
George Joseph Skepton, of Baltimore, Md.
Frank Albin Skirvan, of Baltimore, Md.
Paul William Slunt, Jr., of Linthicum, Md.
Kenneth Joseph Smith, of Ellicott City, Md.
Paul Henry Steinbach, of Baltimore, Md.
Lawrence Walter Stetz, of Glen Burnie, Md.
Henry John Stielper, of Baltimore, Md.
George Harman Switzer III, of Cockeysville, Md.
Charles Edward Thomas, of Reisterstown, Md.
Frank Tighe, Jr., of Baltimore, Md.
Joseph Phillip Varelli, of Baldwin, Md.
Harry James Walters, of Baltimore, Md.
Leo William Watts, of Reisterstown, Md.
Gerald Dale Welsh, of Baltimore, Md.
Louis Wayne Willett, of Baltimore, Md.
David Willard Williams, of Catonsville, Md.
Steven Jeffrey Wolf, of Baltimore, Md.
Richard Alexander Woodward, of Bel Air, Md.

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## MASTERS OF SCIENCE

### in The Evening College

Charles Robert Abbott, of Reisterstown, Md., B. S. University of Akron, 1961. Management Science.

Richard John Andersen, of Baltimore, Md., B. S. E. University of Michigan, 1962. Management Science.

Richard Lane Anderson, of Rockville, Md., B. S. Bucknell University, 1961. Management Science.

Joseph Ballo, Jr., of Laurel, Md., B. A. Northeastern University, 1968. Numerical Science.

Stephen Michael Banko, of Laurel, Md., B. S. University of Scranton, 1966. Numerical Science.

Alvin Leonard Bard, of Randallstown, Md., B. S. Towson State College (Md.), 1960. Numerical Science.

Wilma Ann Barger, of Laurel, Md., B. S. University of Maryland, 1964. Numerical Science.

Donna Lee Barker, of Washington, D. C., A. B. Wheaton College, 1967. Numerical Science.

Stephen Robert Bast, of Bowie, Md., B. E. E. Pratt Institute, 1966. Electrical Engineering.

Walter Loren Black, of Upper Falls, Md., B. S. University of Illinois, 1937. Management Science.

Sandy Lacy Bragg, of Laurel, Md., B. S. E., West Virginia University, 1961. Electrical Engineering.

Joseph Michael Bruckler, of Miami, Fla., B. S. University of Florida, 1967. Electrical Engineering.

William Edward Brundick, of Glen Burnie, Md., B. S. M. E. Drexel Institute of Technology, 1965. Management Science.

Roger Vincent Buck, of Columbia, Md., B. S. University of Washington, 1964. Numerical Science.

David Richard Carey, of Ellicott City, Md., B. S. E. The Johns Hopkins University, 1967. Numerical Science.

Martin Stephen Cassidy, of Baltimore, Md., B. A., B. E. E. University of Delaware, 1965. Management Science.

Frederick Dean Chamberlin, of Los Olivos, Calif., B. S. E. E. Colorado State University, 1965. Electrical Engineering.

Gordon Edward Couperthwaite, of Baltimore, Md., B.S. E. E. Michigan Technological University, 1963. Management Science.

Andrew Paul Cox, Jr., of Lutherville, Md., B. E. S. The Johns Hopkins University, 1959. Management Science.

John Ballantine Dash, of Glen Burnie, Md., B. S. E. The Johns Hopkins University, 1964. Numerical Science.

Marvin Arthur Dean, of Baltimore, Md., B. E. E. Cooper Union, 1949; M. S. E. E. Columbia University, 1958. Management Science.

Barbara Barnes Dekovic, of Laurel, Md., B. S. University of Illinois, 1967. Numerical Science.

Ella Beck Dobson, of Hyattsville, Md., B. A. Fisk University, 1960. Numerical Science.

John Eugene Donohew, of Derwood, Md., B. S. E. Case Institute of Technology, 1952. Management Science.

Joseph Edward Dunn, of Laurel, Md., B. S. in E. E. Pennsylvania State University, 1957; M. S. George Washington University, 1966. Management Science.

Winston Owen Edwards, of Philadelphia, Pa., B. A. Lincoln University, 1965. Numerical Science.

David Marlin Espenshade, of Alexandria, Va., B. S. E. E. Massachusetts Institute of Technology, 1967. Numerical Science.

Donald Warren Fahey, of Baltimore, Md., B. S. E. Loyola College, 1962; B. E. S. The Johns Hopkins University, 1964. Management Science.

Carl Norman Fauntleroy, Jr., of Washington, D. C., B. A. Hampton Institute, 1962. Numerical Science.

Joseph Louis Felder, of Baltimore, Md., B. S. The Johns Hopkins University, 1967. Management Science.

John Louis Flater, Jr., of Lutherville, Md., B. S. E. The Johns Hopkins University, 1964. Management Science.

Karl Arthur Friberg, of Baltimore, Md., A. B. Dartmouth College, 1967; B. S. E. E. Massachusetts Institute of Technology, 1968. Electrical Engineering.

Guy Harlan Frindell, of Silver Spring, Md., B. S. E. E. Massachusetts Institute of Technology, 1966. Electrical Engineering.

Gary Paul Gafke, of Columbia, Md., B. S. E. E. University of Wisconsin, 1967. Electrical Engineering.

David Robert Gambrel, of University Park, Fla., B. S. E. E. Purdue University, 1965. Electrical Engineering.

Rimantas Glemza, of Baltimore, Md., A. B. Rutgers University, 1957; M. A. The Johns Hopkins University, 1961; Ph. D., 1963. Electrical Engineering.

George Gluck, of Boulder, Colo., B. S. Brooklyn College, 1967. Numerical Science.

Allen Jay Goldberg, of Silver Spring, Md., B. S. Cornell University, 1968. Numerical Science.

Seymour Norman Goldstein, of Silver Spring, Md., B. S. Brooklyn College, 1967. Numerical Science.

Sidney Grollman, of Randallstown, Md., B. S. E. The Johns Hopkins University, 1967. Electrical Engineering.

Robert LeRoy Harroun III, of Reston, Va., B. S. E. The Johns Hopkins University, 1965. Electrical Engineering.

Douglas Bruce Helmuth, of Towson, Md., B. S. E. E. Carnegie-Mellon University, 1968. Electrical Engineering.

James Allen Henderson, of Baltimore, Md., B. S. United States Naval Academy, 1962. Management Science.

Edwin William Charles Hildebrand, Jr., of Ellicott City, Md., B. S. E. The Johns Hopkins University, 1965. Numerical Science.

Thomas Ignatius Himmelheber, of Cockeysville, Md., B. S. Loyola College, 1961. Management Science.

Alexander Starr Hughes, of College Park, Md., B. S. E. E. Lafayette College, 1962. Electrical Engineering.

Charles Leo Hughes, Jr., of Baltimore, Md., B. S. United States Naval Academy, 1959; B. E. E. University of Virginia, 1965. Management Science.

Frederic James Jacoby, of Laurel, Md., B. S. E. E. Worcester Polytechnic Institute, 1963. Numerical Science.

Hermenzo D. Jones, of Newark, N. J., B. S. Fairleigh Dickinson University, 1966. Physics.

Spectroscopic Properties of the Absorption Spectrum of $GdCl_3 \cdot 6H_2O$.

Barry Kaminsky, of Baltimore, Md., B. S. M. E. University of Maryland, 1963; M. E. Stevens Institute of Technology, 1965. Management Science.

G. Stanley Gordon Kinkaid, of South Shields, England, B. S. Kings College, University of Durham, New Castle, England, 1962. Numerical Science.

William Francis Knannlein, of Glen Burnie, Md., B. S. in E. E. Rose Polytechnic Institute, 1968. Electrical Engineering.

Matthew Paul Kristof, of Millersville, Md., B. S. Pennsylvania State University, 1965. Management Science.

Carole Jean Lake, of Baltimore, Md., B. A. Gettysburg College, 1968. Numerical Science.

Robert David Lake, of Baltimore, Md., B. A. Gettysburg College, 1967. Numerical Science.

Guy Edward Lambert, of Baltimore, Md., B. S. E. E. Purdue University, 1967. Electrical Engineering.

Robert Curtis Lambert, of Adelphi, Md., B. S. Mth. University of Pittsburgh, 1968. Numerical Science.

Jerry Thurman Lamm, of College Park, Md., B. S. E. E. University of Texas, 1968. Electrical Engineering.

Loren David Lange, of Greenbelt, Md., B. S. Iowa State University, 1967. Numerical Science.

Sheldon Stuart Langsam, of Baltimore, Md., B. E. The Cooper Union, 1965. Electrical Engineering.

Marshall Lasky, of Washington, D. C., B. A. St. John's College, 1968. Numerical Science.

Frank Siegfried Locke, of Timonium, Md., B. M. E. University of Delaware, 1951; M. B. A. University of Pennsylvania, 1955. Management Science.

Dianne Lee Maar, of New Carrolltown, Md., B. S. Mth. Massachusetts Institute of Technology, 1967. Numerical Science.

Patricia Mahalic, of Baltimore, Md., B. S. Pennsylvania State University, 1964. Applied Physics.

Michael Cushing Malcolm, of Laurel, Md., B. S. E. E. University of New Hampshire, 1967. Electrical Engineering.

Richard Thomas Malone, of Camp Springs, Md., B. S. E. E. University of Maryland, 1961. Space Technology.

Walter Adam Marcinski, of Columbia, Md., B. S. E. The Johns Hopkins University, 1966. Management Science.

Lawrence M. Mastracci, of Silver Spring, Md., B. E. The Johns Hopkins University, 1955. Space Technology.

Robert Larue Maust, Jr., of Beltsville, Md., B. S. Virginia Polytechnic Institute, 1966. Numerical Science.

Owen Joseph McAteer, of Upper Falls, Md., B. S. The Johns Hopkins University, 1965. Electrical Engineering.

James Peter McDonald, of Columbia, Md., B. S. E. E. Newark College of Engineering, 1966. Electrical Engineering.

Warren Lee Mensch, of Silver Spring, Md., B. S. Illinois Institute of Technology, 1962. Management Science.

James Franklin Miller, of Pasadena, Md., B. S. University of Arkansas, 1949; M. A., 1951. Numerical Science.

Thomas Allen Milligan, of Glen Burnie, Md., B. S. The University of Wisconsin, 1968. Electrical Engineering.

John William Milne, of Ellicott City, Md., B. S. E. E. University of Pennsylvania, 1960. Electrical Engineering.

Lon Walter Montgomery, of Glen Burnie, Md., B. S. Carnegie-Mellon University, 1968. Electrical Engineering.

Charles Grady Moran, of Baltimore, Md., B. S. Memphis State University (Tenn.), 1966. Numerical Science.

David Glenn Mullens, of Ellicott City, Md., B. S. E. University of Wyoming, 1966. Numerical Science.

Gail Sandler Nathanson, of Columbia, Md., B. S. Towson State College (Md.), 1966. Numerical Science.

Robert Carl Nelson, of Baltimore, Md., B. S. Purdue University, 1966. Management Science.

Darrel Allen Nixon, of Annapolis, Md., B. E. S., Physics Cleveland State University (Ohio), 1967. Numerical Science.

Howard Doyle Noble, Jr., of Baltimore, Md., B. A. Lincoln University, 1966. Space Technology.

Francis John Orlosky, of Laurel, Md., B. S. Pennsylvania State University, 1967. Electrical Engineering.

Peter Ernest Partridge, of Columbia, Md., B. S. Virginia Polytechnic Institute, 1963. Applied Physics.

Harold Peter Joseph Pazourek, of Silver Spring, Md., B. E. S. The Johns Hopkins University, 1964. Numerical Science.

William Henry Petty, of Fairfax, Va., B. A. Marshall University, 1963. Management Science.

Peter Henrotin Pincoffs, of Severna Park, Md., B. E. E. Cornell University, 1952; M. S. E. The Johns Hopkins University, 1966. Management Science.

Norman J. Plourde, of West Enfield, Maine, B. S. E. E. University of Maine, 1965. Electrical Engineering.

Richard Joseph Prengaman, of Severna Park, Md., B. S. E. E. Carnegie Institute of Technology, 1966. Numerical Science.

Raymond LeRoy Reed, of Laurel, Md., B. A. University of of Minnesota, 1966. Numerical Science.

Peter Patrick Ricci, of Baltimore, Md., B. S. E. (Mech.) The Johns Hopkins University, 1961; B. S. E. (Elec.), 1964. Numerical Science.

Jeannette Marie Rivoire, of Baltimore, Md., B. S. Northeast Louisiana State College, 1960. Numerical Science.

Donald Anthony Rossman, of Gaithersburg, Md., B. S. Polytechnic Institute of Brooklyn, 1963. Numerical Science.

Jerome Bradley Scanlon, of Columbia, Md., B. S. Mth. Villanova University, 1962. Numerical Science.

Raymond Martin Schulmeyer, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1956; B. S., 1968. Numerical Science.

John Francis Sechrist, Jr., of Rockville, Md., B. S. E. Gannon College, 1966. Electrical Engineering.

JoAnne Settles, of Laurel, Md., B. A. Ohio State University, 1964; M. A., 1966. Numerical Science.

Larry Thomas Shaff, of Bel Air, Md., B. E. S. The Johns Hopkins University, 1958; B. S. E., 1965. Management Science.

Norman Edward Siems, of Aberdeen, Md., B. S. Rensselaer Polytechnic Institute, 1966. Physics.

Differential Cross Sections for High-Energy Electron Scattering and Form Factor Determination.

Howard Neil Silver, of Greenbelt, Md., B. A. Rutgers University, 1965. Numerical Science.

Linda Lockhart Smith, of Greenbelt, Md., B. A. University of North Carolina, 1967. Numerical Science.

William Gordon Snyder, of Oradell, N. J., A. B. Duke University, 1968. Numerical Science.

Louis Edward Stein, of Fairfax, Va., B. S. E. E. Virginia Polytechnic Institute, 1958. Electrical Engineering.

Martins Sturmanis, of Beltsville, Md., B. A. University of Minnesota, 1962. Numerical Science.

John Szostak, of Columbia, Md., B. E. E. University of Delaware, 1964. Electrical Engineering.

Michael Gary Thomason, of Baltimore, Md., B. S. E. E. Clemson University, 1965. Electrical Engineering.

Robert Everett Thurber, of Silver Spring, Md., B. S. E. E. University of Maryland, 1965. Electrical Engineering.

Helyn Utley Tjaden, of Glen Burnie, Md., B. A. Cedar Crest College, 1967. Numerical Science.

Brian Charles Toeneboehn, of Chevy Chase, Md., B. S. E. E. Washington University, 1965. Electrical Engineering.

Sidney Trieger, of Baltimore, Md., B. E. S. The Johns Hopkins University, 1964. Management Science.

Joseph Edward Urban, Jr., of Baltimore, Md., B. S. Virginia Polytechnic Institute, 1965. Electrical Engineering.

Peter VanDyke, of Baltimore, Md., B. S. Webb Institute of Naval Architecture, 1960; Ph. D. Harvard University, 1964. Management Science.

Robert Archie Watson, of Kettering, Ohio, B. S. E. University of Illinois, 1963. Management Science.

Thomas Joseph Willett, of Ruxton, Md., B. S. Purdue University, 1955. Management Science.

Charles Edward Williams, of Washington, D. C., B. S. Morehouse College, 1965. Space Technology.

John Phillips Wilson, of Baltimore, Md., B. A. Mississippi Southern College, 1957; M. Ed. The Johns Hopkins University, 1961. Management Science.

Linda Meadow Wilson, of Silver Spring, Md., B. S. Mth. Bucknell University, 1966. Numerical Science.

August Gerhart Witte, of Silver Spring, Md., B. S. Valparaiso University, 1966. Numerical Science.

James Doyle Wood, of Fallston, Md., B. S. Pennsylvania State University, 1960. Management Science.

Stephen Patrick Yanek, of Laurel, Md., B. A. Mth. St. Vincent College, 1968. Numerical Science.

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# MASTERS OF EDUCATION

## in The Evening College

Susan Ruth Pressman Albert, of Baltimore, Md., B. S. Towson State College (Md.), 1965.

Frederick G. Kwadzo Agbengu, of Sokpoe, Ghana, B. A. University of Ghana, 1965.

Lawrence Eugene Arnold, of Baltimore, Md., B. S. University of Dayton, 1959.

Larry Vaughn Baker, of Germantown, Md., B. S. University of Florida, 1966.

Ernest Richard Barlow, of Baltimore, Md., B. S. University of Chattanooga, 1965.

Paul Franklin Bauer, of Bel Air, Md., M. A. Miami University, 1967.

Anne O'Donnell Baughman, of Baltimore, Md., A. B. George Washington University, 1955.

Edna Anna Beck, of Baltimore, Md., B. S. Towson State College (Md.), 1963.

Marsha Weinstein Birnbaum, of Baltimore, Md., B. S. Adelphia University, 1967.

William James Blewett, Jr., of Glen Burnie, Md., B. S. East Stroudsburg State College (Pa.), 1960.

Rochelle Herman Blumberg, of Baltimore, Md., B. S. Towson State College (Md.), 1965.

Anne Lilly Boone, of Baltimore, Md., B. S. Morgan State College (Md.), 1966.

Jacqueline Ann Boothe, of Baltimore, Md., B. S. N. The Johns Hopkins University, 1954.

A. Berne Briggs, of Baltimore, Md., B. S. Oklahoma Agricultural and Mechanical College, 1921; M. A. University of Oklahoma, 1924.

Elizabeth Bietsch Brizendine, of Baltimore, Md., B. S. Dickinson College, 1939.

Edward Woodman Brown, Jr., of Baltimore, Md., A. B. Princeton University, 1961.

Walter Cannon Bull, of Columbia, S. C., B. S. University of South Carolina, 1963; B. D. The Protestant Episcopal Theological Seminary in Virginia, 1966.

Betty Scruggs Burnett, of Baltimore, Md., A. B. Austin College, 1948.

Joseph Patrick Carroll, of Baltimore, Md., B. S. Georgetown University, 1954.

Deane Creswell Cody, of Baltimore, Md., B. S. Towson State College (Md.), 1952.

** Myrna Randolph Cooper, of Baltimore, Md., B. A. Fisk University, 1961.

Cecelia Patricia Cymek, of Cockeysville, Md., B. S. David Lipscomb College, 1961.

Magdalena Correa de Cruz-Coke, of Santiago, Chile.

Joseph L. DeVitis, of Baltimore, Md., B. A. The Johns Hopkins University, 1967.

Judith Frances Diven, of Baltimore, Md., B. A. University of Maryland, 1968.

Kathleen Koller Dixon, of Baltimore, Md., B. S. University of Maryland, 1955.

Paulette Boarman Duncan, of Linthicum Heights, Md., B. S. Towson State College (Md.), 1965.

Elizabeth Parker Dyett, of Baltimore, Md., B. S. Morgan State College (Md.), 1954.

Wilbur Louis Ellison, of Rising Sun, Md., A. B. and Th. B. Eastern Nazarene College, 1958.

Anton Stanley Endler, of Sykesville, Md., B. S. The Johns Hopkins University, 1966.

Jean Webb Ewing, of Brooklandville, Md., A. B. Goucher College, 1966.

Peggy Black Feldman, of Baltimore, Md., B. A. Towson State College (Md.), 1962.

Stephen Willis Fisher, of Baltimore, Md., B. A. Haverford College, 1962.

Marilynn Ford Fortner, of Highland, Md., B. A. State University of New York, 1964.

Gene Smith Foster, of Baltimore, Md., B. A. Morgan State College (Md.), 1966.

Mary Sandra Durm Foster, of Baltimore, Md., B. S. University of Maryland, 1966.

Marie Sockwell Francis, of Baltimore, Md., B. A. Virginia Union University, 1953.

** Posthumously.

Harriet Sandra Friedman, of Baltimore, Md., B. A. Hunter College, 1968.

Sheldon Allan Grafstein, of Downsview, Ont., Canada, B. S. S. Loyola College, 1968.

Patricia Ann Granger, of Baltimore, Md., B. S. Towson State College (Md.), 1961.

Nancy Weitzel Gruver, of Cockeysville, Md., B. A. Beaver College, 1963.

Michael Gerard Gunning, of Baltimore, Md., B. A. Boston College, 1961.

Jerry Norman Haar, of Baltimore, Md., B. A. The American University, 1969.

Shirley Hayes Hargrove, of Baltimore, Md., B. S. Coppin State College (Md.), 1951.

Wallace Russell Harris, of Aberdeen, Md., B. S. Tennessee Technological University, 1949.

Margaret Sweeney Hartman, of Baltimore, Md., B. S. Towson State College (Md.), 1967.

Joan Marilyn Hashagen, of Baltimore, Md., A. B. Hood College, 1959.

Stuart Hoffman, of Brooklyn, N. Y., B. S. The Johns Hopkins University, 1967.

Richard Edmund Horowicz, of Baltimore, Md., B. S. Georgetown University, 1961.

Judith Hearne Hughlett, of Cambridge, Md., B. S. Salisbury State College (Md.), 1963.

Marjorie Eloise Newman Hunt, of Baltimore, Md., B. S. Coppin State College (Md.), 1964.

Nancy Hanna Hunt, of Baltimore, Md., B. S. The Johns Hopkins University, 1961.

John Arch Hutchens, of Fort Meade, Md., B. A. Augusta College, 1967.

Helen Wheatly Kaufman, of Baltimore, Md., B. S. University of Maryland, 1957; M. S., 1965.

Dianne Gaudio Kienlen, of Baltimore, Md., B. A. University of Illinois, 1965.

Mary Clare Knowles, of Baltimore, Md., B. S. S. S. Loyola College, 1967.

James Francis La Calle, of Baldwin, Md., B. S. Springfield College, 1965.

Elaine Uchuck La Pasha, of Baltimore, Md., B. S. University of Maryland, 1946.

Sandra Belo Leonard, of Philadelphia, Pa., B. S. The Johns Hopkins University, 1965.

Jeffrey D. Lukenbill, of Baltimore, Md., B. A. The Catholic University of America, 1962; M. A. University of Michigan, 1967.

Frances Finneran May, of Annapolis, Md., B. A. Stonehill College, 1960.

Marguerite Alma McAvoy, of Baltimore, Md., B. S. Towson State College (Md.), 1942.

Jane Wilson Michael, of Baltimore, Md., B. S. Pennsylvania State University, 1965.

Albert A. Mosha, of Richmond, Va., M. A. The Catholic University of America, 1960.

Suzanne Ruff Motsko, of Randallstown, Md., B. S. Towson State College (Md.), 1966.

Hazel Soben Mowry, of Baltimore, Md., A. B. Goucher College, 1947.

Ruth W. Nicholson, of Baltimore, Md., B. S. Tuskegee Institute, 1951.

Merete Feldbek Nielsen, of Baltimore, Md., B. S. Towson State College (Md.), 1962.

Mary Ann DelGiacco Nocerino, of Laurel, Md., B. S. The City College of New York, 1965.

Ruth Johnson Norris, of Baltimore, Md., B. S. Coppin State College (Md.), 1952.

Betty Ann Owings, of Columbia, Md., B. A. Bridgewater College, 1965.

John Newton Peabody, Jr., of Baltimore, Md., B. A. Miami University, 1967.

Patricia Jo Kingma Perlman, of Wheaton, Md., A. B. George Washington University, 1967.

James Everard Pickard, of Aberdeen, Md., B. S. State Teachers College, Bridgewater, Mass., 1963.

Caroline Hayes Ramirez, of Baltimore, Md., B. S. Mars Hill College, 1966.

Ann Bowman Ramsay, of Churchville, Md., B. S. Towson State College (Md.), 1964.

Anne Zech Rauck, of Bel Air, Md., A. B. Towson State College (Md.), 1964.

Willette Irene Reddick, of Baltimore, Md., A. B. West Virginia University, 1964.

Faye Sylvia Redding, of Glen Burnie, Md., B. S. Towson State College (Md.), 1958.

Don McQuoid Reynolds, of Severna Park, Md., B. A. University of Southern California, 1962.

Francis Vernon Roberts, of Baltimore, Md., B. S. Coppin State College (Md.), 1952.

Sallie Horne Russell, of Baltimore, Md., B. A. Morgan State College (Md.), 1945.

Jyoti Bipinchadra Shah, of Richmond, Va., B. A. University of Bombay, 1959; M. A., 1961; B. Ed., 1963.

Cynthia Levitt Silbert, of Baltimore, Md., B. S. Towson State College (Md.), 1963.

Robert Newcomer Snyder, of Baltimore, Md., B. A. Pennsylvania State University, 1961.

Margaret Carter Spencer, of Baltimore, Md., B. A. Goucher College, 1938.

Eugenia Bell Starghill, of Baltimore, Md., B. S. Coppin State College (Md.), 1961.

Inda Norton Steele, of Annapolis, Md., B. S. Georgetown College (Ky.), 1958.

Phyllis Mae Sunshine, of Baltimore, Md., B. S. Towson State College (Md.), 1967.

Benjamin Marvin Thomas III, of Timonium, Md., A. B. Franklin and Marshall College, 1964.

Donna Sheets Towers, of East New Market, Md., B. S. Salisbury State College (Md.), 1965.

Jasper A. Trigg, of Columbia, Md., B. S. West Virginia State College, 1955.

Barbara Jean Uricheck, of Baltimore, Md., B. S. University of Maryland, 1961.

Gertrude Marie Vavrina, of Baltimore, Md., B. A. St. Joseph College, 1966.

Celine Margaret Wachter, of Baltimore, Md., B. S. Towson State College (Md.), 1966.

Treopia Green Washington, of Baltimore, Md., B. S. Hampton Institute, 1956.

Julia Baldwin Waxter, of Baltimore, Md., B. A. Sweet Briar College, 1949; B. S. Towson State College (Md.), 1950.

Richard Weber, of Arnold, Md., B. S. Towson State College (Md.), 1964.

Emily Ford Willis, of Baltimore, Md., B. S. Towson State College (Md.), 1962.

Keith Duane Wilson, of Baltimore, Md., B. S. Towson State College (Md.), 1955.

Virginia Ann Zylstra, of Linthicum Heights, Md., B. A. Western Washington State College, 1955.

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## MASTERS OF LIBERAL ARTS

### in The Evening College

Carole Anne Alexander, of Baltimore, Md., B. A. Vanderbilt University, 1966.

Murray Alpern, of Baltimore, Md., A. B. University of Pittsburgh, 1950.

Robert William Armacost, of Baltimore, Md., B. A. Dickinson College, 1959.

Ann Fisher Bacharach, of Baltimore, Md., B. A. Wheaton College, 1952.

John Berry Bell, Jr., of Kingsville, Md., B. S. The Citadel, 1946; M. Ed. The Johns Hopkins University, 1961.

David Hughes Bennet, Jr., of Abingdon, Md., B. S. University of Texas, 1962; B. A., 1962; M. A., 1963.

Richard Olaf Berndt, of Baltimore, Md., B. S. Villanova University, 1964.

Albert Frank Bertoni, of Mineola, N. Y., B. A. University of Dayton, 1965.

Mildred Goldstein Blum, of Pikesville, Md., B. A. University of Maryland, 1959.

Shearman Douglas Bowers, of Annapolis, Md., B. S. Towson State College (Md.), 1964.

Ruth Dillon Brock, of Baltimore, Md., B. S. H. E. University of Georgia, 1945.

Frona Alice Hohman Brown, of Baltimore, Md., B. A. Goucher College, 1965.

Mary Eleanor Brugger, of Baltimore, Md., B. A. University of Maryland, 1966.

Aleda Marie Bunch, of Baltimore, Md., A. B. University of Maryland, 1963; M. Ed. Goucher College, 1964.

Darrell Oscar Butler, of Bel Air, Md., B. S. The Johns Hopkins University, 1968.

Anthony Morris Carey, of Baltimore, Md., A. B. Princeton University, 1957; LL. B. Harvard Law School, 1963.

Donald Kenneth Carey, of Bel Air, Md., B. S. Salisbury State College (Md.), 1966.

Wilford Councill Chase, of Baltimore, Md., B. A. Randolph Macon College, 1966.

Kenneth Leo Chatelaine, of Baltimore, Md., B. A. St. Paul Seminary, 1957.

Audrey Jane Cheek, of Cockeysville, Md., A. B. University of North Carolina, 1953; M. Ed. Loyola College, 1965.

Franklin Donald Christhilf, of Arlington, Va., B. E. The Johns Hopkins University, 1949; B. D. Wittenberg College, 1956.

Elwood Elias Cook, of Phoenix, Md., A. B. University of Texas, 1945.

Beverly Williams Crisp, of Baltimore, Md., B. S. Morgan State College (Md.), 1962.

Audrey Cyphers Crush, of Cockeysville, Md., A. B. Goucher College, 1958.

Mauricio Oliveira Cunha, of Baltimore, Md., B. S. The Johns Hopkins University, 1968.

Phillip James Cunningham, of Baltimore, Md., B. S. University of California, Los Angeles, 1949; M. A. St. Paul's College, 1955.

Joseph Kevin Curran, of Baltimore, Md., A. B. Mount St. Mary's College, 1965.

Thomas W. Davis, of Baltimore, Md., B. S. Hampton Institute, 1949.

Katherine Julie Day, of Croydon, England, B. A. Southampton University, 1965.

Geraldine Maks Demske, of Glen Burnie, Md., B. S. Towson State College (Md.), 1963.

Mary Aswell Doll, of Owings Mills, Md., A. B. Connecticut College, 1962.

Gretchen N. Duchac, of Baltimore, Md., B. A. Carroll College, 1941.

Jesse Lawrence Dunnock, of Baltimore, Md., B. S. Loyola College, 1969.

Dolores Laraine Fahey, of Annapolis, Md., B. S. Frostburg State College (Md.), 1957.

Rosalind Feinberg Flax, of Baltimore, Md., B. A. American University, 1967.

Earl Leroy Fox, of Silver Spring, Md., A. M. University of Pennsylvania, Graduate School, 1951.

Suzanne S. Frank, of Pittsburgh, Pa., B. A. University of Maryland, 1960.

Barbara Frankel, of Baltimore, Md., B. S., The Johns Hopkins University, 1963.

Elaine Zacconi Furst, of Baltimore, Md., B. S. Alfred University, 1965.

Mary Cygelman Garrity, of Baltimore, Md., B. A. University of Delaware, 1966.

Ruth Beitchman Gavis, of Baltimore, Md., B. S. Boston State College, 1953.

Robert James Gerstung, of Baltimore, Md., B. S. Villanova University, 1954; LL. B. University of Maryland, 1957.

Saul Glickstein, of Baltimore, Md., B. S. University of Maryland, 1962.

Jeffrey Alan Gordon, of Baltimore, Md., A. B. University of California, Berkeley, 1967.

Blanche Wolfson Goren, of Baltimore, Md., B. S. The Johns Hopkins University, 1968.

Mary Mueller Greenwood, of Baltimore, Md., B. S. University of Maryland, 1965.

Samuel Butler Grimes III, of Baltimore, Md., B. A. Wesleyan University, 1963.

Janet Mina Haack, of Gettysburg, Pa., B. S. Towson State College (Md.), 1964.

David Eduard Haberstich, of Baltimore, Md., B. F. A. Rochester Institute of Technology, 1963.

Henry George Hahn II, of Baltimore, Md., B. S. Mount Saint Mary's College, 1963; M. A. University of Maryland, 1965.

Lawrence Charles Hanratty, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Ann Swomley Harden, of Finksburg, Md., B. S. The Johns Hopkins University, 1965.

Ruth Patricia Hays, of Baltimore, Md., B. S. The Johns Hopkins University, 1966.

Irene Chenette Hölljes, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Maurice Benjamin Howard, of Bel Air, Md., B. A. Salisbury State College (Md.), 1964; M. A. Columbia University, 1965.

Harriet Bloom Hutzler, of Baltimore, Md., B. S. University of Maryland, 1964.

Llewellyn Edler Jones III, of Baltimore, Md., B. S. Towson State College (Md.), 1962; M. Ed. Loyola College, 1966.

Donald Ambrose Killgallon, of Baltimore, Md., B. A. King's College, 1963; M. A. University of Maryland, 1966.

Margaret Anna F. Korz, of Baltimore, Md., B. B. A. University of Wisconsin, 1963.

Janice Kutz, of Baltimore, Md., A. B. Goucher College, 1966.

Frances Baker Lamb, of Baltimore, Md., B. S. University of Virginia, 1936.

Justus Michael Molitor Lenschau, Jr., of San Francisco, California, B. A. University of California, 1957.

Patricia Florence Lewis, of Baltimore, Md., A. B. Ed. Fairmount State College (W. Va.), 1957.

Shirley Edwards Lewis, of Baltimore, Md., A. B. Morgan State College (Md.), 1961.

James Robert Linnen, of Baltimore, Md., B. A. St. Norbert College, 1962.

Patricia Whiting Linton, of Baltimore, Md., B. A. College of Notre Dame of Maryland, 1966.

Richard Vernon Manser, of Baltimore, Md., B. A. University of Maryland, 1964.

Marvin Howard Marcus, of Baltimore, Md., B. A. Cornell University, 1966.

James Daniel McCallister, Jr., of Baltimore, Md., B. S. Towson State College, 1964.

Martin Kenneth McQuage, of Baltimore, Md., A. B. Morgan State College (Md.), 1968.

Louise Ann Meister, of Baltimore, Md., B. A. St. Olaf College, 1962.

Cynthia Berger Milkman, of Laurel, Md., B. A. University of Maryland, 1966.

Carole Lee Miller, of Reisterstown, Md., B. A. Loyola College, 1966.

George LeCompte Mitchell, of Brooklandville, Md., A. B. The Johns Hopkins University, 1950.

Mary Catherine Molter, of Severna Park, Md., B. A. Hood College, 1964.

Jo-Ann Cechin Murphy, of Baltimore, Md., B. A. Fitchburg State College (Mass.), 1966.

Eugenie Funda Obst, of Glen Burnie, Md., B. S. The Johns Hopkins University, 1965.

George William Parker, of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Edward Magruder Passano, Jr., of Baltimore, Md., B. S. The Johns Hopkins University, 1967.

Virginia Patty, of Baltimore, Md., B. S. S. S. Loyola College, 1969.

Eugenia Mary Pelczar, of Baltimore, Md., B. A. College of Notre Dame of Maryland, 1968.

Harriett Watts Podboy, of York, Pa., A. B. Lynchburg College, 1939.

Edwin William Powers, of Baltimore, Md., B. S. M. E. Louisiana State University, 1959; M. S. M. E. Drexel Institute of Technology, 1963.

Saphronia Higgins Redd, of Baltimore, Md., B. S. Morgan State College (Md.), 1959.

Helen Scott Henshaw Reed, of Alexandria, Va., B. S. College of William and Mary, 1962.

Paul Melvin Reed, of Alexandria, Va., B. A. Bucknell University, 1957.

Louise Semple Remanjon, of Baltimore, Md., B. A. Tulane University, 1940; M. Social Work, 1943.

Virginia Jones Richardson, of Baltimore, Md., A. B. Morgan State College (Md.), 1942; B. S. in L. S. Western Reserve University, 1944; M. S. Columbia University, 1949.

Allan Phillipson Robb, of Laurel, Md., B. A. North Central College, 1962.

Nolan Howard Rogers, of Baltimore, Md., B. A. Duke University, 1953; L. L. B. University of Maryland, 1956.

John Gordon Schmidt, of Lutherville, Md., B. S. The Johns Hopkins University, 1956.

Maurice Herbert Schreiber, of Baltimore, Md., B. S. University of Maryland, 1943; M. Ed., 1949.

Edward George Sellmayer, of Phoenix, Md., B. S. Loyola College, 1949.

Sylvan Myron Elliot Shane, of Baltimore, Md., D. D. S. University of Maryland, 1943; B. S. The Johns Hopkins University, 1963.

Dorothy Dante Sheybani, of Baltimore, Md., B. S. The Johns Hopkins University, 1969.

Ruby Friese Shubkagle, of Baltimore, Md., B. S. Towson State College (Md.), 1948; M. S. in Ed. Indiana University, 1957; Ed. D., 1960.

Herbert Franklin Shuler, of Loganville, Pa., B. S. Kutztown State College (Pa.), 1963.

Joseph David Sindall, Jr., of Baltimore, Md., B. S. Towson State College (Md.), 1963; M. A. T. Purdue University, 1967.

Gerald V. Smolinski, of Baltimore, Md., A. B. The Johns Hopkins University, 1959.

Gloria Ford Street, of Baltimore, Md., B. S. Morgan State College (Md.), 1957.

A. Ruth Carey Swanstrom, of Ellicott City, Md., B. S. Towson State College (Md.), 1952; M. Ed. Loyola College, 1961.

Elizabeth Ann Swenson, of Baltimore, Md., B. A. Gettysburg College, 1966.

Viola Jones Taliaferro, of Baltimore, Md., B. S. Virginia State College, 1947.

Irene O. Charchalis Traska, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1965.

R. Joyce Valliant, of Baltimore, Md., B. A. Washington College, 1962.

Sara Veale Walker, of Baltimore, Md., B. A. Western Maryland College, 1943.

David Frederick Wallace, of Baltimore, Md., A. B. Morgan State College (Md.), 1965.

Howard Townsend Watson, Jr., of Allentown, Pa., B. A. Union College, 1965.

William Nye Weld, of Baltimore, Md., B. A. Harvard University, 1966.

Mary Ann Tahquette Widenhouse, of Baltimore, Md., B. S. Ed. Western Carolina College, 1957.

Louis Melis Winkelman, Jr., of Baltimore, Md., B. S. Towson State College (Md.), 1964; M. Ed. Western Maryland College, 1966.

Gloria Small Wolfson, of Rockville, Md., B. A. Brooklyn College, 1957.

Antoinette Maria Worsham, of Baltimore, Md., B. A. College of Notre Dame of Maryland, 1965.

George Richard Zehnle, of Baltimore, Md., B. A., B. S. Ed. University of Dayton, 1966.

Judith Callahan Zelazny, of Baltimore, Md., A. B. Ohio University, 1961.

Harry Adam Zoller, of Linthicum Heights, Md., B. S. The Johns Hopkins University, 1957.

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## CERTIFICATES OF ADVANCED STUDY IN EDUCATION

### in The Evening College

Kathryn Riley Almond, of Fairfield, Conn., B. S. The Johns Hopkins University, 1959; M. Ed., 1965.

Gladys Meadows Allison, of Bel Air, Md., B. S. The Johns Hopkins University, 1962; M. A. East Tennessee State University, 1966.

Walter Joseph Blair, of Baltimore, Md., B. S. University of Virginia, 1940; LL. B., 1948; M. L. A. The Johns Hopkins University, 1966.

Griffith Byrd Dorn, Jr., of Ellicott City, Md., B. S. Towson State College (Md.), 1958; M. Ed. The Johns Hopkins University, 1964.

Wilhelmina Allen Garner, of Baltimore, Md., B. S. Morgan State College (Md.), 1940; M. A. Columbia University, 1942.

Lisa Shapiro Greenberg, of Baltimore, Md., B. A. American University, 1966; M. A. Newark State College (N. J.), 1967.

Popi Frangakis Kalathas, of Baltimore, Md., A. B. West Liberty State College (W. Va.), 1953; M. Ed. The Johns Hopkins University, 1964.

Frances Marie Elizabeth King, of Baltimore, Md., B. A. University of Maryland, 1946; M. N. Yale University, 1957; M. Ed. The Johns Hopkins University, 1968.

Sarah Woodruff Korn, of Baltimore, Md., B. S. University of Pennsylvania, 1944; M. A. Teachers College, Columbia University, 1960.

Judith Hughes Dowdy LaCalle, of Baldwin, Md., B. S. Towson State College (Md.), 1963; M. S. University of Wisconsin, 1965.

Bruce Cloy Meadows, of California, Md., B. S. Nyack Missionary College, 1956; M. Ed. The Johns Hopkins University, 1966.

George Howard Moore, of Baltimore, Md., B. A. Otterbein College, 1949; S. T. B. Temple University, 1953.

Stanton Henry Neumann, of Baltimore, Md., B. S. West Chester State College (Pa.), 1961; M. A. University of Maryland, 1965.

Joyce Winston Owens, of Baltimore, Md., B. S. Fayetteville State College (N. C.), 1941; M. A. North Carolina College, 1952.

Jacqueline Zeuch Palmer, of Briarcliff Manor, N. Y., B. A. University of Colorado, 1943; M. Ed. The Johns Hopkins University, 1965.

Casimir Robert Przybyl, of Timonium, Md., B. S. University of Detroit, 1949; M. B. A., 1963.

Catherine Howard Snead, of Baltimore, Md., B. S. Coppin State College (Md.), 1947; M. A. New York University, 1958.

George Howard Stewart, of Timonium, Md., B. S. Georgia Institute of Technology, 1941; M. L. A. The Johns Hopkins University, 1965.

Joyce Stroup Suter, of Baltimore, Md., B. A. College of Notre Dame of Maryland, 1964; M. A. Bowling Green State University (Ohio), 1965.

Donald Louis Todaro, of Edgewood, Md., B. S. in Ed. State Teachers College (Pa.), 1955; M. S. E. Westminster College, 1961.

Jane Finch Twamley, of Baltimore, Md., B. S. The Johns Hopkins University, 1956; M. Ed. University of North Carolina, 1962.

Richard E. Ullrich, of Baltimore, Md., A. B. St. Mary's Seminary and University, 1961; M. Ed. Loyola College, 1964.

Geraldine Colson Young, of Woodstock, Md., B. S. Towson State College (Md.), 1959; M. Ed. The Johns Hopkins University, 1967.

Sue Small Zoller, of Sparks, Md., B. S. Miami University, 1962; M. Ed., 1964.

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## MASTERS OF SCIENCE

### in The School of Hygiene and Public Health

David Robert Bolling, of Baltimore, Md., B. S. The Johns Hopkins University, 1966. Biostatistics.

Estimation of Map Intervals and Order of Loci on a Chromosome.

John Covert Boyd, of College Park, Md., A. B. Harvard College, 1962. Pathobiology.

Telemetry Studies of the Internal Body Temperatures of Adelie and Emperor Penguins at Cape Crozier, Ross Island, Antarctica.

Soon O. Chung, of Seoul, Korea, M. D. Severance Medical School, Yonsei University, 1959. Population and Family Health.

Volume Changes During the Preimplantation Stages of Mouse Egg Development.

Soon-Ho Lee, of Seoul, Korea, B. S. Chungang University, Korea, 1958; M. P. H. Seoul National University, 1961. Pathobiology.

Studies of the Mechanism of Action of the Mycobacterial Growth Factor: Mycobactin P.

Justina Frank Long, of Towson, Md., B. S. Towson State College, 1967. Chronic Diseases.

Family Mortality Among Leukemics and Control Subjects with a Critical Review of Methods of Study of Familial Aggregation.

Raphael A. O. Shonekan, of VOM (near Jos), Nigeria, B. S. College of Technology, Surrey England, 1951. Pathobiology.

The Neuroanatomy of the Rodent Acanthocephalan, *Moniliformis dubius.*

Prantika Som, of Nagpore, India, B. V. Sc. and A. H. University of Calcutta, 1965. Pathobiology.

The Effects of Temperature and Various Substances on the Mucrociliary Transport System of a Shell-less Mollusc, *Nudibranchiata.*

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## DOCTORS OF SCIENCE

### in The School of Hygiene and Public Health

Sami Ridha Ali, of Baghdad, Iraq, B. S. University of Baghdad, 1960; M. S. American University of Beirut, 1965. Pathobiology.

Laboratory Investigations on the Use of the Sterile Male Technique for Control of Mosquito Vectors of Disease.

Anas Morsi El-Mahdi, of Cairo, Egypt, M. B. B. Ch. Cairo University, 1959. Radiological Science (Radiobiology).

Comparative Study on the Effects of Thymidine and 5-Bromodeoxyuridine on a Proliferating Asynchronous Cell Population with and without X-radiation.

Andie Ma Hsueh, of Baltimore, Md. B. S. Tunghai University, Taiwan, 1959; M. S. Texas Woman's University, 1963. Biochemistry.

Protein in the Maternal Diet on the Physiological Development of the Offspring.

Ira Herbert Kolman, of Baltimore, Md., B. S. University of Maryland, 1964; M. A. 1966. Environmental Medicine.

Averaged Electroencephalic Responses from Aphasic Patients.

Robert William Lennox, of Cheswick, Pa., B. S. Ed. State Teachers College (Indiana, Pa.) 1961. Pathobiology.

Post-Cercarial Growth and Development of *Schistosoma mansoni.*

Peter Jacob Levin, of Larchmont, N. Y., A. B. Harvard College, 1961; M. P. H. Yale Medical School, 1965. Medical Care and Hospitals.

Physician Characteristics and Use of Hospital Services.

Bikas Chandra Pal, of Calcutta, India, B. S. University of Calcutta, 1960; M. S. 1962. Pathobiology.

Ethology of the Indian Spike-Tailed Paradise Fish *Macropodus cupanus.*

R. Ramakumar, of Trivandrum, India, B. S. University College, Trivandrum, 1950; M. S. Gujarat University, Ahemedabad, 1957; M. S. Stanford University, 1961. Population and Family Health.

Factors Associated with the Residential Mobility of Negroes in Metropolitan and Nonmetropolitan Areas of the United States: 1955-1960.

K. Kathleen Subrahmanian, of Winnipeg, Canada, B. S. Muskingum College, 1960. Biostatistics.

The Application of Multivariate Testing with Adjustments for Covariates.

Penelope R. Williamson, of Baltimore, Md., B. S. Antioch College, 1965. Mental Hygiene.

The Feeding Ecology of the Red-eyed Vireo and Associated Foliage Gleaning Birds.

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## MASTERS OF PUBLIC HEALTH

### in The School of Hygiene and Public Health

Alieu Sheikh Abdullah, of Freetown, Sierra Leone, B. S. Hampton Institute, 1952; M. A. New York University, 1955; D. D. S. Howard University, 1959.

Shamim Afzal, of Nazimabad, Pakistan, M. B. B.S. University of Karachi, 1955.

Marie E. Ali, of Baltimore, Md., B. S. N. The Johns Hopkins University, 1956; M. A. Loyola University, 1967.

Jose Apter, of Rego Park, N. Y., M. D. University of Buenos Aires Medical School, 1964.

Mabelle Rajanikant Arole, of India, B. S. Womens Christian College, Madras, 1954; M. B. B. S. Christian Medical College, Vellore, 1959.

Rajanikant Shankar Arole, of India, B. S. Wilson College, Bombay, 1954; M. B. B. S. Christian Medical College, Vellore, 1959.

Abayomi Bandele Bandipo, of Offa, Nigeria, M. B. B. S. University of Ibadan Medical School, 1966.

William Conwell Banton II, of St. Louis, Mo., M. D. Howard University College of Medicine, 1946.

Gigliola Baruffi, of Bergamo, Italy, B. A. Liceo-Ginnasio Statale "G. Carducci," Milano, 1951; M. D. Facoltà di Medicina and Chirurgia, Universita di Milano, 1957.

Marion Warner Bogle, of Washington, D. C., B. S. N. Georgetown University, 1960.

Donald L. Borcherding, of McLean, Va., B. A., M. D. University of Iowa, 1958.

Frances Novak Bower, of Washington, D. C., B. S. University of Minnesota, 1952.

Thomas Stephen Bozzo, of Wheaton, Md., B. S. Pharm. St. Johns University College of Pharmacy, 1961.

Frederick Naphtali Brand, of Baltimore, Md., M. D. Hebrew University School of Medicine, 1956.

Philip Charles Brown, of Darlington, Md., B. S. University of Maryland, 1959; D. D. S. 1967.

Harold Gray Carter, of San Antonio, Texas, D. M. D. University of Alabama School of Dentistry, 1957.

Prokopes Colevas, of Washington, D. C., A. B. George Washington University, 1951; M. D. George Washington University School of Medicine, 1954.

Peter Buckley Collis, of Washington, D. C., B. A. Stanford University, 1964; M. D. St. Louis University School of Medicine, 1968.

Elaine P. Cremin, of Baltimore, Md., B. S. Boston College, 1966.

June Elizabeth Culley, of Frankford, Ky., B. S. N. Frances Payne Bolton School of Nursing, Case Western Reserve University, 1963.

Tunde Davies, of Lagos, Nigeria, M. B. B. S. University of Ibadan, 1965.

Nina Makarand Dehejia, of Bombay, India, M. B. B. S. University of Bombay, 1959.

Iluminada Torres-Diego, of Baltimore, Md., M. D. University of Santo Tomas, Philippines, 1956.

Gerard Dominic Dobrzycki, of Lutherville, Md., B. S. University of Maryland, 1957; M. D. 1967.

Emma Jean Downie, of Kankakee, Ill., B. A. MacMurray College, 1959.

Lawrence Alfred Dunmore, Jr., of Washington, D. C., B. S. South Carolina State College, 1949; M. S. Howard University, 1951; M. D. Howard University College of Medicine, 1955.

Philip Thaddeus Durfee, Jr., of Alameda, Calif., B. S. University of California, 1957; D. V. M. 1959.

David Leroy Esler, of Baltimore, Md., B. S. The Johns Hopkins University, 1969.

James Charles Evans, of Ontario, Canada, M. D. Univerversity of Toronto, 1959.

Charlotte Ferencz, of Snyder, N. Y., B. S. McGill University, 1944; M. D.; C. M., 1945.

Elenice Marie Ferraz, of Belo Horizonte, Brazil, M. D. Federal University of Minas-Gerais, Brazil, 1964.

Mark Joseph Fitzpatrick, of Vienna, Va., M. D. State University of New York, 1953; B. S. United States Merchant Marine Academy, 1963.

James P. G. Flynn, of Baltimore, Md., B. A. Dublin University-Trinity College, 1960; M. B. B. Ch., B. A. O. 1962; M. A. 1964.

Robert Paul Fogarty, of Salt Lake City, Utah, D. D. S. University of Maryland Dental School, 1964.

Barbara Lea Franklin, of Lake Ariel, Pa., B. S. in Ed. Mansfield State College, 1968.

Barry R. Friedlander, of Huntington, W. Va., A. B. University of Pennsylvania, 1964; M. D. West Virginia University, 1968.

Melvyn Greberman, of Philadelphia, Pa., A. B. University of Pennsylvania, 1962; M. S. 1963; M. D. Hahnemann Medical College, 1967.

Frances Kruvand Greer, of Miami, Fla., B. S. Long Island University, 1941.

Michael Solomon Grobsmith, of Shaker Heights, Ohio, B. A. New York University, 1941.

Prakash Lal Grover, of Punjab, India, B. A. Punjab University, 1958; M. A. Delhi School of Social Work, University of Delhi, 1960.

Margaret Mary Haggerty, of Baltimore, Md., B. S. N. Saint Joseph College, 1961.

Richard Carl Hancey, of Tullahoma, Tenn., B. A. Pomona College, 1958; M. D. Baylor University College of Medicine, 1962.

Berkley Charles Hathorne, of Washington, D. C., A. B. Boston University, 1950; S. T. B. 1953; Th. D. 1960.

Henry Regis Herbert, Jr., of Baltimore, Md., B. S. University of Scranton, 1956; M. D. Georgetown University, 1960.

Grover C. Honeycutt, Jr., of Gate City, Va., M. D. Medical College of Virginia, 1945.

Thomas J. Hughes, of Delmar, Iowa, B. A. St. Ambrose College, 1962; M. D. University of Iowa College of Medicine, 1966.

Hisako Rose Imai, of Quebec, Canada, B. N. McGill University, 1967.

Sheila S. Joroff, of Silver Spring, Md., B. A. Miami University, 1963.

Richard F. Keeler, of Harrisonburg, Va., B. S. Eastern Mennonite College, 1960; M. D. University of Virginia Medical School, 1964.

Misbah Afzal Khan, of Lahore, Pakistan, M. B. B. S. King Edward Medical College, 1952.

Sami A. Khoury, of McLean, Va., M. D. Damascus University, Syria, 1950.

Arnfried Adolf Kielman, of Quebec, Canada, B. S. Sir George Williams University, 1960; M. D. C. M. McGill University, 1965.

Adeoye D. Kolawole, of Abeokuta, Nigeria, M. B. B. Ch. Welsh National School of Medicine, Wales, 1965.

Alois Josef Kuhner, of Geneva, Switzerland, lic. rer. pol. University of Fribourg, Switzerland, 1962; Dr. Es. Sc. Economiques University of Neuchatel, 1963.

Ulrich Rudolf Laaser, of Berlin, Germany, M. D. University of Tübingen, 1968.

Elka Stempel Levin, of Baltimore, Md., B. S. National College J. F. Alcorta, Buenos Aires, 1946; D. D. S. University of Buenos Aires School of Dentistry, 1952.

Martin E. Levy, of Laurel, Md., A. B. University of Pennsylvania, 1953; M. D. Hahnemann Medical College, 1957.

Shan-Ching Liao, of Taiwan, Republic of China, M. B National Taiwan University Medical College, 1965.

Arnold Norman Lubin, of Buffalo, N. Y., B. A. University of Buffalo, 1958; M. D. State University of New York at Buffalo, 1962.

Margaret Ann Marshall, of Baltimore, Md., B. S. State University of New York at Buffalo, 1966.

Yogeshwar Dayal Mathur, of Lucknow, India, B. E. University of Roorkee, 1962.

Wichit Maturosapas, of Thonburi, Thailand, M. D. Faculty of Medicine and Siriraj Hospital, University of Medical Sciences, 1960.

Hans Josef Mayer, of Bremen, Germany, M. D. University Kiel, 1945.

Charles Porter Mayhugh, Jr., of Harlan, Iowa, M. D. University of Iowa, 1968; A. B. Grinnell College, 1968.

Whitman Eldredge McConnell, of St. Petersburg, Fla., B. S. University of Florida, 1961; M. D. University of Miami Medical School, 1966.

Marian D. McGee, of Baltimore, Md., D. P. H. N. Queens University, Ontario, 1955.

Zahida Sultana Mir, of Lahore, West Pakistan, M. B. B. S. Fatima Jinnah Medical College, Lahore, 1954.

Ramiro Molina Cartes, of Santiago, Chile, M. D. University of Chile, 1965.

Andrew Arthur Monjan, of Ontario, Canada, B. S. Rensselaer Polytechnic Institute, 1960; Ph. D. University of Rochester, 1965.

Marianito Ruiz Montero, of Manila, Philippines, M. D. Manila Central University, 1956.

Lalitha Bai Moolky, of Mangalore, South India, M. B. B. S. Madras Medical College, 1951.

James Emory Moore, of Seattle, Wash., B. S. Howard University, 1949; D. D. S. 1957.

Sue Ellen Nalder, of Baltimore, Md., B. S. N. University of Washington, 1965.

Nabil Tamir Nassar, of Beirut, Lebanon, B. S. American University of Beirut, 1961; M. D. 1965.

Joel Alan Newman, of Little River, Calif., B. A. Lehigh University, 1959; Ed. M. Harvard University, 1960; M. A. University of Chicago, 1968.

John Richard Norris, of Baltimore, Md., M. B., Ch. B. University of Manchester, England, 1958.

Eladio Ortiz-Aguilera, of Valencia, Venezuela, C. Engr. Central University of Venezuela, 1962.

Pedro R. Ortiz C., of Aragua, Venezuela, C. Engr. Universidad de Los Andes, 1961.

Hipolito Pabon Lasso, of Colombia, South America, M. D. Cali School of Medicine, Colombia, 1964.

Daniel Young Patterson, of Towson, Md., B. A. University of Kentucky, 1962; M. D. 1966.

John Vandaveer Payne, of Dry Ridge, Ky., B. A. Berea College, 1962; M. D. University of Kentucky College of Medicine, 1966.

Johan Duncan Pedersen, of Rockville, Md., M. D. University of Buenos Aires School of Medicine, 1964.

Eddie Perry, of Chesapeake, Va., D. D. S. Medical College of Virginia, 1949; B. A. Emory and Henry College, 1957; B. D. Garrett Theological Seminary, 1959.

Edward R. Pierce, of Baltimore, Md., B. A. University of Louisville, 1962; Ph. D. 1968.

Frances Brandl Pope, of Baltimore, Md., B. S. N. University of North Carolina, 1960.

Margaret Mary A. Pope, of Whittier, Calif., B. S. N. University of San Francisco, 1965.

Neal Lee Presant, of Flushing, N. Y., A. B. Cornell University, 1967.

Russell Barry Rayman, of Miami Beach, Fla., B. A. University of Michigan, 1957; M. D. 1961.

James Courtland Robinson, of Stevenson, Md., A. B. Princeton University, 1949; M. D. Columbia University College of Medicine, 1958.

Lewis Howard Roht, of Great Neck, N. Y., B. S. Union College, 1960; M. D. New York Medical College, 1964.

Gerard Rolland, of Rennes, France, M. D. Université de Rennes, 1967.

David Emerson Root, of Boise, Idaho, B. S. University of Utah, 1958; M. D. The Bowman Gray School of Medicine, 1962.

Peter Erwin Rubin, of Gainesville, Fla., B. A. Brown University, 1963; M. D. University of Rochester, 1967.

William Marcellus Runkle, of San Antonio, Texas, B. S. Lynchburg College, 1958; M. D. University of Virginia, 1962.

Tilak Narayan Sanghi, of Hyderabad, India, M. B. B. S. Osmania Medical College, Hyderabad, 1952.

Peter Christian Scheidt, of Highland, Md., B. A. The Johns Hopkins University, 1961; M. D. Duke University School of Medicine, 1965.

Dietrich Schmoll, of Oberhöchstadt, Germany, M. D. Eberhard-Karls Universität, Tübingen, 1967.

Paul Gauguin Shane, of Philadelphia, Pa., B. A. Cornell University, 1956; M. S. Columbia University, 1959.

Mary Theresa Shean, of Bronx, N. Y., B. S. N. St. Johns University, 1957.

Deborah B. Shephard, of New York, N. Y., B. S. N. Cornell University—New York Hospital School of Nursing, 1967.

John Wesley Simmons, of Philadelphia, Pa., B. S. Morehouse College, 1955; M. S. Western Reserve University, 1958; M. D. Hahnemann Medical College, 1963.

Orapindh Singhadej, of Bangkok, Thailand, M. D. University of Medical Sciences, Bangkok, 1965.

James David Small, of Bethesda, Md., B. S. Elmhurst College, 1959; M. A. Southern Illinois University, 1960; D. V. M. University of Illinois, 1964.

George Marlowe Smith, of Scarsdale, N. Y., A. B. Princeton University, 1955; M. D. New York University School of Medicine, 1960.

Egil I. Snilsberg, of Ekholt, Norway, M. D. The University of Oslo, 1962.

Dubravka Stampar, of Zagreb, Yugoslavia, M. D. Medical Faculty Zagreb, 1956.

Horace McElreath Stiles, of Maypearl, Texas, B. S. Texas Wesleyan College, 1952; D. D. S. Baylor Dental School, 1960.

Verner Stillner, of Fort Washakie, Wyo., B. S. Wheaton College, 1963; M. D. Wayne State University School of Medicine, 1967.

James Studnicki, of Pittsburgh, Pa., B. S. University of Pittsburgh, 1965; M. B. A. George Washington University, 1968.

Dennis Ray Swanson, of Tacoma, Wash., B. A. University of Washington, 1964; M. D. 1968.

Ruth Heyse Ternlund, of Crofton, Md., B. S. Columbia University, 1966.

Suketami Tominaga, of Himeji, Japan, M. D. Osaka University Medical School, 1962; D. M.Sc. 1967.

Ronnie Everett Townsend, of Silver Spring, Md., B. S. Medical College of Virginia, 1958.

William Royden VanArsdell, Jr., of Rochester, N. Y., A. B. Carleton College, 1960; M. D. University of Rochester, 1964.

Raul Alberto Wapnir, of Baltimore, Md., M. S. University of Buenos Aires, 1953; Ph. D. 1954.

Bruce Lord Wilder, of Derry, N. H., B. S. Tufts University, 1961; M. D. 1966.

Eliza McCormick Wolff, of Baltimore, Md., B. S. N. The Johns Hopkins University, 1965; M. S. University of Maryland, 1968.

Julia Louise Zartman, of Boyertown, Pa., B. S. N. University of Rochester, 1966.

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## DOCTORS OF PUBLIC HEALTH

### in The School of Hygiene and Public Health

Chi-I-Cheng, of Taipei, Taiwan, Republic of China, M. B. Tsing-Tao Medical College, 1945; M. P. H. The Johns Hopkins University, 1961. Population and Family Health.

Need Perception and Its Discrepancy With Action Realization in Family Planning.

Annemarie F. Crocetti, of Baltimore, Md., A. B. Manhattanville College of the Sacred Heart, 1940; M. P. H. The Johns Hopkins University, 1963. Chronic Diseases.

A Study of Characteristics of Volunteers for the National Diet Heart Study.

Ton That Gia, of Saigon, South Vietnam, M. D. University of Saigon, 1962; M. P. H. The Johns Hopkins University, 1966. Pathobiology.

Comparative Antigenic Studies of Some Strains of Chimpanzee and Human Adenoviruses.

Robert West Jones III, of Damascus, Md., B. S. Georgia School of Technology, 1941; M. P. H. The Johns Hopkins University, 1967. Environmental Health.

Maryland Environmental Health Manpower Projection 1980.

Robert Edgar Reynolds, of Baltimore, Md., B. A. Yale University, 1960; M. D. Harvard Medical School, 1964; M. P. H. The Johns Hopkins University, 1967. Medical Care and Hospitals.

The Medical Intern and Chronic Disease: An Experiment in Attitude Change.

James Bernard Tenney, of Baltimore, Md., A. B. Oberlin College, 1955; M. D. Hahnemann Medical College, 1960; M. P. H. The Johns Hopkins University, 1966. Medical Care and Hospitals.

The Content of Medical Practice.

Marian Leslie Webb, of Saskatchewan, Canada, M. D. University of Alberta, 1958; M. P. H. The Johns Hopkins University, 1968. Medical Care and Hospitals.

A Study of the Emergency Medical Care System in Metropolitan Baltimore.

Ernest Yuh-Ting Yen, of Taiwan, Republic of China, B. M. National Taiwan University, 1964; M. P. H. The Johns Hopkins University, 1966. International Health.

Health Centers in Taiwan.

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## DOCTORS OF PHILOSOPHY

### in The School of Hygiene and Public Health

Suzanne Elizabeth Bayley, of Crownsville, Md., B. S. Washington College, 1963. Pathobiology.

Ecology and Disease of Eurasian Water Milfoil (Myriophyllum spicatum L.) in Chesapeake Bay.

Lynne Louise Bruner, of Corning, N. Y., B. S. Cornell University, 1965. Environmental Medicine.

Electron Microscopy Studies of the Cochlear Nucleus of the Cat.

Frank Paul Castronovo, Jr., of Maplewood, N. J., B. S. Rutgers—The State University, 1962; M. S. 1964. Radiological Science.

Enhancement of Indium Toxicity of Phagocytosis.

Eugene Louis Giroux, of Saint Paul, Minn., B. S. Stanford University, 1964. Biochemistry.

Some Properties of Pepsins A.

Quintin Lucero Kintanar, of Cebu, Philippines, M. D. University of the Philippines, 1961. Environmental Medicine.

Studies on the Mechanism of the Hypolipidemia and Fatty Liver Induced by Orotic Acid on the Rat.

Helen Miriam Marcus, of New York, N. Y., B. S. The City College of New York, 1964. Biostatistics.

A Stochastic Model of the Population Dynamics of Malaria Parasites in the Mammalian Host.

Saul Hoffman Rosenberg, of Philadelphia, Pa., A. B. University of Pennsylvania, 1961; M. A. Catholic University of America, 1965. Biostatistics.

Topics in Variance Component Estimation.

James Dennis Shaeffer, of Baltimore, Md., B. S. Kings College, 1965; M. S. Temple University, 1967. Radiological Science.

X-ray Induced Unscheduled DNA Synthesis in Mammalian Cells: Relation to Cell Recovery and Chromosome Rejoining Variation with Cell Cycle Stage, and Effect of Metabolic Inhibition.

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## MASTERS OF ARTS

### in The School of Advanced International Studies

Len Earl Ackland, of Aurora, Colo., B. A. University of Colorado, 1966.

Alfred Aebi, of Walnut Creek, Calif., B. A. California State College, 1968.

Ebenezer Amatei Akuete, of Accra, Ghana, B. Sc. University College of Ghana, 1961.

Kwabena Akyeampong, of Akwapim, Ghana, B. A. Howard University, 1966.

George Wallace Alapas, of New Cumberland, Pa., B. A. The Johns Hopkins University, 1968.

Hugo Bayardo Amores, of Quito, Ecuador, B. A. San Diego State College, 1966.

Robert Nickles Anderson, Jr., of Tacoma, Wash., B. A. Wesleyan University, 1965.

Bruce Erroll Andrews, of Cheverly, Md., B. A. The Johns Hopkins University, 1970.

Robert E. Arevalos, of Laguna Beach, Calif., B. A. Texas A & M University, 1964.

Elizabeth Crawford Bachman, of Short Hills, N. J., B. A. Mount Holyoke College, 1968.

David Paul Barton, of Silver Spring, Md., B. A. Dartmouth College, 1966.

Herbert Allen Behrstock, of Glencoe, Ill., B. A. University of Michigan, 1964.

John Stephen Berger, of Winchester, Mass., B. S. F. S. Georgetown University, 1968.

Susan Ellen Berger, of Miami Beach, Fla., A. B. Cornell University, 1968.

Carol Camille Bergren, of Oregon, Mo., B. A. Sarah Lawrence College, 1968.

Paul Howard Borsuk, of Madison, Wis., B. A. The Johns Hopkins University, 1970.

John Redfern Bruch, Jr., of Lakewood, Ohio, A. B. Holy Cross College, 1966.

Robert Lee Buchanan, of Hockessin, Del., B. A. The Johns Hopkins University, 1970.

Sheldon Leslie Bulkin, of Roosevelt, N. J., B. A. University of Pittsburgh, 1968.

Cheryl Ann Card, of Westons Mills, N. Y., A. B. Cornell University, 1968.

Sharon Marie Carlson, of Lyndhurst, Ohio, B. A. Baldwin-Wallace College, 1968.

Robert Clarke Castelle, of Cumberland, Md., B. A. The Johns Hopkins University, 1970.

Robert Neil Conner, of Grand Rapids, Ohio, B. A. Bowling Green State University, 1963.

Tamara Claudia Agnes Dahn, of Middle Village, N. Y., B. A. Goucher College, 1967.

Douglass Charles Day, of Livingston, N. J., B. A. Dickinson College, 1968.

John Gerow De Longe, of San Marino, Calif., B. A. Stanford University, 1966.

Jaime A. P. de Melo, of Pau, France, B. A. Syracuse University, 1968.

Thomas Alex Donkor, of Ghana, Laurea Catholic University, Milan, 1968.

Robert James Dragone, of Buffalo, N. Y., B. A. State University of New York, Buffalo, 1968.

Randall Gordon Drain, of Freeport, N. Y., B. A. Brown University, 1965; J. D. Georgetown University, 1968.

Mark Jay Feldman, of Tenafly, N. J., B. A. Harvard College, 1968.

Samar Freemon, of Chattanooga, Tenn., B. A. Vassar College, 1968.

Bonnie Lee Garber, of Millburn, N. J., A. B. Mount Holyoke College, 1968.

Jean-Guy Giraud, of Bezier, France, Diploma Paris Law School and Political Studies Institute, 1966; 1968.

Lawrence Edward Gray, of Alden, Kansas, B. A. Tulane University, 1968.

Olga Grkavac, of Milwaukee, Wis., B. A. University of Wisconsin, 1968.

Doris Adele Guess, of Portland, Ore., B. A. University of Denver, 1967.

Nancy Kay Hetzel, of Evansville, Ind., B. A. Purdue University, 1967.

Lutz Juergen Hoeppner, of Bombay, India, B. A. Harvard College, 1968.

Eric James Hooglund, of Waterville, Maine, B. A. University of Maine, 1966.

James Gerhard Huff, of Silver Spring, Md., B. A. The American University, 1968.

Marvin Whitefield Humphreys, of Washington, D. C., B. A. Haverford College, 1958; M. A. The Fletcher School of Law and Diplomacy, Tufts University, 1959.

Alice McMahan Huppuch, of Salem, N. Y., B. A. Wheaton College, 1968.

Zachary Tracy Irwin, of Scotrun, Pa., B. A. Hamilton College, 1968.

Michael Charles Jackson, of New York, N. Y., B. A. Dartmouth College, 1962; M. B. A. New York University, 1966.

George Alex Kent, of San Antonio, Texas, B. A. Cornell University, 1968.

Dwight Yost King, of Hutchinson, Kan., B. A. Goshen College, 1964; B. D. Harvard University, 1968.

Christopher Francis Kinney, of Huntington, N. Y., B. A. Yale University, 1965.

Alan Lee Kjelleren, of Baldwin, N. Y., B. A. The Johns Hopkins University, 1963.

Herman G. Th. W. Knippenberg, of Hengelo, The Netherlands, Diploma, Netherlands School of Business, 1965; B. A. State University, Utrecht, 1967.

Nicoline Dorothea Kokxhoorn, of New York, N. Y., B. A. Jackson College, Tufts University, 1968.

Elie David Krakowski, of New York, N. Y., B. A. Yeshiva University, 1968.

Michael Herbert Krepon, of Sharon, Mass., B. A. Franklin and Marshall College, 1968.

Hansje Inge Kunst, of Ridgefield, Conn., B. A. University of Connecticut, 1968.

Hans Udo Kurr, of Bronx, N. Y., B. A. Fordham University, 1968.

George Lach, of Baltimore, Md., B. A. The Johns Hopkins University, 1970.

Franco P. La Rosa, of Rome, Italy, Laurea University of Rome, 1968.

George Albert Lawton, Jr., of Atlanta, Ga., A. B. Gonzaga University, 1967.

Roger S. Leeds, of Scarsdale, N. Y., B. S. Columbia University, 1966.

Stephanie Erne Levinson, of Owings Mills, Md., B. A. Sarah Lawrence College, 1968.

Eleanor Levy, of Northridge, Calif., B. A. University of California, Berkeley, 1968.

Howard Bernard Libauer, of Baltimore, Md., B. A. The Johns Hopkins University, 1970.

Douglas William Lister, of Stoneham, Mass., B. A. Bowdoin College, 1968.

Jose Maria Llados, of Buenos Aires, Argentina, B. A. National College Pergamino, 1958; LL. B. Law School, University of Buenos Aires, 1967.

Daniel Patrick Maley III, of Tyler, Texas, A. B. Brown University, 1967.

Robert Francis Maloney, of Hartsdale, N. Y., A. B. Holy Cross College, 1968.

William Theodore Mann, of Dedham, Mass., A. B. Princeton University, 1963.

Shlomo Marom, of Rishon Lecion, Israel, B. A. Hebrew University, 1961.

Thomas Michael Mauge, of Wheat Ridge, Colo., B. A. Arizona State University, 1966.

James Allen McHenry, Jr., of Topeka, Kan., B. A. The College of Wooster, 1966.

Susan Tritle Minick, of Glens Falls, N. Y., B. A. De Pauw University, 1968.

Eleanor Ann Mitchell, of Orlando, Fla., A. B. Bennett College, 1968.

Reggie Moore, of Boulder, Colo., B. A. University of Colorado, 1966.

Constance Yvonne Morris, of Harbel, Liberia, B. A. Bard College, 1968.

Susan Margaret Mowle, of Princeton, N. J., B. A. Rosemont College, 1968.

Simon Kent Newman, of London, England, B. A. Pembroke College, Oxford, 1968.

Craig Victor Olson, of Portland, Ore., B.A. Whitman College, 1966.

Herbert James Paine, of Brookline, Mass., B. A. Boston University, 1967.

Thomas Michael Peay, of Baltimore, Md., B. A. Coppin State College, 1968.

Jessica S. Pernitz, of Forest Hills, N. Y., B. A. Barnard College, 1967.

Joseph August Pika III, of Fallston, Md., B. A. The Johns Hopkins University, 1970.

Margaret Brady Piton, of Columbus, Ohio, B. A. St. Mary's College, Notre Dame, 1968.

John Lawrence Pitts, of Bethesda, Md., A. B. Princeton University, 1967.

Richard James Price, of Cleveland, Ohio, B. A. The Johns Hopkins University, 1970.

Cynthia Louise Prussing, of Dallas, Texas, B. A. Southern Methodist University, 1968.

George Robert Pugh, of Englewood, Colo., B. A. The Johns Hopkins University, 1969.

Bennett Ramberg, of Los Angeles, Calif., B. A. University of Southern California, 1968.

James Leckie Rives, of Atlanta, Ga., B. A. Dartmouth College, 1968.

Benjamin Moore Rowland, of New Britain, Conn., B. A. Yale University, 1965.

George B. Saliba, of Zurrieq, Malta, B. A. Plater College, Oxford, 1968.

David Abbott Schneiderman, of New York, N. Y., B. A. The Johns Hopkins University, 1970.

Emily C. Seigler, of Clarence, N. Y., A. B. Occidental College, 1968.

William James Seigler III, of Mount Airy, N. C., B. A. Davidson College, 1968.

Rodolfo C. Severino, Jr., of Manila, Philippines, B. A. Ateneo de Manila University, 1956.

William Lee Shell, of Grand Island, Neb., B. A. Trinity University, 1963.

Mustapha Samuel Soni Sherman, of Cape Mount, Liberia, B. A. University of Liberia, 1959.

Susan Shively, of Chambersburg, Pa., B. A. Ohio Wesleyan University, 1968.

Stanley Sienkiewicz, of South River, N. J., A. B. Princeton University, 1968.

Michael Nevin Smith, of Santa Rosa, Calif., B. A. University of California, Berkeley, 1966.

Michael Joseph Sodaro, of Baltimore, Md., A. B. Fordham College, 1967.

Robert Allen Spade, of Martinez, Calif., B. A. University of California, Santa Barbara, 1968.

Robert Alan Sperl, of Middletown, N. Y., B. A. Harpur College, 1968.

John F. Stewart, Jr., of Mexico City, Mexico, B. A. San Jose State College, 1962.

Jonathan Story, of Abingdon, England, B. A. Trinity College, Dublin, 1963; M. A., 1969.

Terese Sulikowski, of Saint Paul, Minn., B. A. University of Minnesota, 1968.

Anne Bond Ternes, of Washington, D. C., B. A. The American University, 1968.

Charles Gessner Twyman, of New Milford, Conn., B. A. The Johns Hopkins University, 1963.

Thomas Ucke, of Rotenburg, Germany, Diplom, Technical University, Berlin and Hannover, 1968.

Paul Thomas Walker, of Chattanooga, Tenn., B. A. Morehouse College, 1964.

Carolyn Troy Welch, of Mt. Carmel, Conn., B. A. The George Washington University, 1967.

Joan Stanley Whitmore, of Vienna, Va., B. A. Vassar College, 1964.

Dennis Paul Williams, of Webster, N. Y., A. B. Boston College, 1965.

James Andrew Winship, of Canandaigua, N. Y., B. A. The Johns Hopkins University, 1970.

Lois G. Wolk, of Philadelphia, Pa., B. A. Antioch College, 1968.

Robert William Zaborski, of Seattle, Wash., B. S. F. S. Georgetown University, 1968.

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## DOCTORS OF PHILOSOPHY

### in The School of Advanced International Studies

William J. Brisk, of Watertown, N. Y., B. A. Brown University, 1960; LL. B. New York University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

Peruvian Agricultural Policy and Politics.

William Elliott Butler II, of Hibbing, Minn., B. A. The American University, 1961; LL. B. Harvard University, 1966; M. A. The Johns Hopkins School of Advanced International Studies, 1963.

The Soviet Union and the Law of the Sea: An Exemplar of the Soviet Approach to International Law.

Chester A. Crocker, of Syosset, N. Y., B. A. Ohio State University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

The Military Transfer of Power in Africa: A Comparative Study of Change in the British and French System of Order.

Roger Warren Fontaine, of Pomona, Calif., B. A. Valparaiso University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

The Foreign Policy-Making Process in Brazil.

Sari Jane Gilbert, of New York, N. Y., B. A. Syracuse University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

From Armistice to Alliance: Goals and Methods in Italian Foreign Policy, 1945 to 1949.

Roger D. Hansen, of Washington, D. C., B. A. Yale University, 1957; B. A., M. A. Oxford University, 1959; M. P. A. Princeton University, 1961.

Mexico's Development: Today's "Miracle" and Yesterday's Heritage.

Walid Khadduri, of Baghdad, Iraq, B. A. Michigan State University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

Social Background of Modern 'Irāqi Politics.

Byron Albert Nichols, of Pendleton, Ore., B. A. Occidental College, 1964; M. A. The Johns Hopkins School of Advanced International Studies, 1966.

The Role and Function of Political Parties in Paraguay.

Soliman A. Solaim, of Riyad, Saudi Arabia, B. S. University of Cairo, 1962; M. A. University of Southern California, 1966.

Constitutional and Judicial Organization in Saudi Arabia.

Maynard Joy Toll, Jr., of Los Angeles, Calif., B. A. Stanford University, 1963; M. A. The Johns Hopkins School of Advanced International Studies, 1965.

Australia in the Evolution of the British Commonwealth, 1919-1939: The Impact of the International Environment.

Edward Weisband, of Brooklyn, N. Y., B. A. Princeton University, 1961; M. A. Stanford University, 1966.

Anticipating the Cold War: Turkish Foreign Policy, 1943-1945.

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# DOCTORS OF MEDICINE

## in the Faculty of Medicine

Robert Alan Adler, of Bound Brook, N. J., B. A. The Johns Hopkins University, 1967.

Knute Stephen Alfredson, of Great Neck, N. Y., B. C. E. Rensselaer Polytechnic Institute, 1962.

Herbert B. Allen, of Dorchester, Mass., B. Music Juilliard School of Music, 1965.

James R. Allen, of Los Bavos, Philippine Islands, B. S. University of Redlands, 1965.

Demetrius H. Bagley, Jr., of Washington, D. C., B. A. The Johns Hopkins University, 1966.

Virginia Rae Bailey, of Catonsville, Md., B. A. The Johns Hopkins University, 1967.

Ronald Jeffrey Barr, of Minneapolis, Minn., B. A. The Johns Hopkins University, 1967.

Mary Garven Beale, of Washington, D. C., B. A. Wellesley College, 1966.

James Charles Bobrow, of Brooklyn, N. Y., B. A. Yale University, 1966.

John Wilder Brantigan, of Baltimore, Md., A. B. Cornell University, 1966.

Charles Henry Caplan, of Seattle, Wash., B. A. The Johns Hopkins University, 1967.

Patrick Francis Carone, of Amityville, N. Y., B. S. Georgetown University, 1966.

Howard A. Carter, of Baltimore, Md., B. A. The Johns Hopkins University, 1966.

Jean Brookhart Case, of Harrisburg, Pa., B. A. Goucher College, 1966.

Franklin Chu, of Mt. Clemens, Mich., B. S. Ohio State University, 1966.

Ronald Leroy Collins, of Columbia, S. C., B. S. University of South Carolina, 1964.

Robert Allan Colyer, of Crown Point, Ind., A. B. Indiana University, 1966.

Arnold Lee Dellon, of Saddle Brook, N. J., B. A. The Johns Hopkins University, 1966.

Peter Densen, of Maplewood, N. J., B. A. Colby College, 1966.

Paul John Eisenbarth, of Bergenfield, N. J., B. A. The Johns Hopkins University, 1967.

Dianne Strobel Elfenbein, of Delmar, N. Y., B. A. Radcliffe College, 1966.

Gerald Jay Elfenbein, of Norristown, Pa., B. A. Harvard College, 1966.

Jerrold Jay Ellner, of Brooklyn, N. Y., A. B. Cornell University, 1966.

Henry Jay Farkas, of Randallstown, Md., B. S. Loyola College, 1965.

Evan Ragland Farmer, of Richmond, Va., B. A. Virginia Military Institute, 1966.

Edward Joel Feinglass, of Baltimore, Md., B. A. Western Maryland College, 1966.

Andrew Mark Glickstein, of Surfside, Fla., B. S. Massachusetts Institute of Technology, 1966.

Douglas Alan Greene, of South Orange, N. J., A. B. Princeton University, 1966.

Gündüz Güçer, of Baltimore, Md., B. A. The Johns Hopkins University, 1966.

Russell Peyton Harris, Jr., of Houston, Texas, B. A. The Johns Hopkins University, 1967.

David Thurston Harrison, of Easton, Md., B. A. Williams College, 1966.

Frederic Lee Henderson, of Dobbs Ferry, N. Y., A. B. Fordham College, 1966.

Paul Hinkes, of Kensington, Md., B. A. Yale University, 1966.

Henry Nelson Hulter, of Dearborn, Mich., A. B. Princeton University, 1966.

Douglas Lee Hurley, of Gainesville, Texas, B. A. Yale University, 1966.

Sheldon Robert Hurwitz, of Columbus, Ohio, B. A. Miami University of Ohio, 1965.

W. Jackson Iliff, of Arnold, Md., B. A. Williams College, 1966.

Stephen Karas, Jr., of Glenshaw, Pa., B. A. Yale University, 1966.

Frederic Ingram Kass, of San Antonio, Texas, B. A. Harvard College, 1966.

Donald Kevin King, of Ho-Ho-Kus, N. J., A. B. Fairfield University, 1966.

Richard Maxwell Klein, of Richmond, Va., B. A. Amherst College, 1966.

Lawrence James Koep, of Monrovia, Cal., B. A. The Johns Hopkins University, 1966.

David Scott Kreuz, of Chisholm, Minn., B. A. Harvard College, 1966.

Thomas Walter Kuebler, of West Allis, Wis., B. A. University of Wisconsin, 1966.

Roger Wayne Kula, of Downers Grove, Ill., B. A. Northwestern University, 1966.

Vincent J. Lamparella, Jr., of Syracuse, N. Y., B. S. Le Moyne College, 1966.

Robert Jan Lerer, of Atlanta, Ga., B. S. Birmingham-Southern College, 1966.

Lai-Sung Eric Leung, of Hong Kong, A. B. Columbia College, 1966.

Frederick Richard Levin, of Randallstown, Md., B. A. The Johns Hopkins University, 1966.

Robert Jules Levy, of University City, Mo., A. B. Washington University, 1966.

Carl P. Lewis, of Redondo Beach, Cal., B. S. University of California, Los Angeles, 1956; Ph. D. Stanford University, 1962.

Carl Warren Lindquist, of Westport, Conn., B. A. Yale University, 1961; B. M. S. Dartmouth Medical School, 1968.

Hugh Lansing Lipton, of Fort Lauderdale, Fla., B. A. The Johns Hopkins University, 1967.

Jeffrey Lowell Marsh, of Seattle, Wash., B. A. The Johns Hopkins University, 1967.

Mark Noël Martz, of Hanover, Pa., A. B. The Johns Hopkins University, 1966.

David Owen Mazur, of Fargo, N. Dak., B. A. The Johns Hopkins University, 1967.

George W. McLean, of Pinole, Cal., B. A. University of California, Berkeley, 1966.

John Andrew Messenheimer, Jr., of Alliance, Ohio, B. S. Mt. Union College, 1966.

Stephen Thomas Miller, of Benton, Ky., A. B. University of Kentucky, 1966.

Joseph Odell Moore, of Rochelle, Ga., B. S. Emory University, 1966.

Ralph Marvin Moskowitz, of Burlingame, Cal., B. A. The Johns Hopkins University, 1967.

Lucille Ann Mostello, of Newark, N. J., B. A. Seton Hill College, 1966.

Joseph Bronislaw Nadol, Jr., of Dedham, Mass., B. A. Harvard College, 1966.

John Peter Nilson, of Hempstead, N. Y., B. A. Colgate University, 1966.

Ronald Sandor Oser, of Washington, D. C., B. A. The Johns Hopkins University, 1967.

John Stewart O'Shea, of Baltimore, Md., A. B. Loyola College, 1966.

Patricia Allen O'Shea, of Syracuse, N. Y., B. S. LeMoyne College, 1966.

Winifred Berner Parker, of Cold Spring, N. Y., B. A. Radcliffe College, 1966.

Alan Pestronk, of Lido Beach, N. Y., A. B. Princeton University, 1966.

Victor L. Randolph, of Washington, Ga., B. S. Morehouse College, 1966.

Richard Allan Reisman, of Rock Island, Ill., B. S. University of Illinois, 1966.

Allen M. Rossman, III, of Portland, Ore., B. A. Grinnell College, 1966.

Ivor Royston, of Silver Spring, Md., B. A .The Johns Hopkins University, 1967.

Steven Edward Rubin, of Malden, Mass., B. A. Harvard College, 1966.

David Jonathan Scheff, of Miami Shores, Fla., B. A. Harvard College, 1966.

Malcolm Scott Schoen, of New Rochelle, N. Y., B. A. The Johns Hopkins University, 1967.

Jerome Marshall Shalf, of Kettering, Ohio, B. S. Ohio State University, 1966.

Charles Stuart Shaver, of Ontario, Canada, A. B. Princeton University, 1966.

Thomas Roberts Shepler, of Towson, Md., B. S. The United States Air Force Academy, 1966.

Ladd Leroy Sievenpiper, of Alden, N. Y., B. A. State University of New York at Buffalo, 1966.

Ralph J. W. Small, of Flushing, N. Y., B. S. Massachusetts Institute of Technology, 1966.

John Rodger Steeper, of Madison, Wis., A. B. Oberlin College, 1966.

Philip Dennison Stieg, of Emmaus, Pa., B. A. The Johns Hopkins University, 1966.

Merton Chikao Suzuki, of Los Angeles, Cal., A. B., Occidental College, 1966.

Gregory John Szal, of Montvale, N. J., B. A. The Johns Hopkins University, 1967.

Richard Llewellyn Taw, Jr., of Los Angeles, Cal., B. A. Occidental College, 1966.

Elizabeth Spencer Timms, of Arcadia, Cal., B. A. University of Southern California, 1966.

Trexler Murray Topping, of Amherst, Mass., B. A. Harvard College, 1966.

Donald Lynn Trump, of Sellersburg, Ind., B. A. The Johns Hopkins University, 1967.

Joel Mitchell Vavich, of Tucson, Ariz., B. A. The Johns Hopkins University, 1967.

Barbara Chasen Waller, of Buffalo, N. Y., B. A. Vassar College, 1966.

Steven Allan Wartman, of Philadelphia, Pa., A. B. Cornell University, 1966.

Abby Lois Wasserman, of Clifton, N. J., B. A. The Johns Hopkins University, 1967.

Peter Christopher Weber, of Olney, Ill., B. A. The Johns Hopkins University, 1967.

H. Stephen Williams, of Chino, Cal., B. A. Stanford University, 1963.

Barry Whitcomb Wolcott, of Middlebury, Vt., B. S. Middlebury College, 1966.

Lawrence S. Zawatzky, of Baltimore, Md., B. A. Franklin & Marshall College, 1966.

Peter Zuromskis, of Shrewsbury, Mass., B. A. Harvard College, 1966.

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## MASTERS OF ARTS

### in the Faculty of Medicine

Dennis Gordon Carlson, of Seattle, Wash., M. D. University of Washington, 1955; M. P. H. University of California, Berkeley, 1963. History of Medicine.

African Fever and British Response: A Study of European Medicine, Technology, and Science in a Non-Western Environment, 1787-1864.

Douglas Edwin Chandler, of Pawatuck, Conn., B. S. The University of Rochester, 1967. Physiological Chemistry.

Robert Eric Johnson, of Los Angeles, Cal., B. S. University of California, Davis, 1967. Physiological Chemistry.

Viesturs Argots Liepkalns, of Weymouth, Mass., B. A. Hiram College, 1966. Physiological Chemistry.

Diane Stanley, of Abilene, Texas, B. S. Trinity University, 1965. Art As Applied To Medicine.

An Atlas of the Intrinsic Musculature in the Hand of *Pithecia Monacha*.

Susan Ann Stephens, of Franklin Lakes, N. J., B. A. Drew University, 1968. Physiological Chemistry.

Paul Henry Weigel, of Baltimore, Md., A. B. Cornell University, 1968. Physiological Chemistry.

Kent Westbrook Wilcox, of Laurel, Md., B. S. Duke University, 1967. Microbiology.

Purification and Characterization of an Exonuclease from Hemophilus influenzae.

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## DOCTORS OF PHILOSOPHY

### in The Faculty of Medicine

Robert Michael Gould, of Chicago, Ill., B. S. Purdue University, 1965. Physiological Chemistry.

Aminoacyl Phosphatidylglycerol Metabolism in Bacteria.

Ulrich Hopfer, of Goettingen, Germany, M. D. University of Goettingen, Germany, 1966. Physiological Chemistry.

The Influence of the Polar Moiety of Lipids on the Ion Permeability of Bilayers.

James Patrick Quigley, of Baltimore, Md., B. S. Manhattan College, 1965. Physiological Chemistry.

The Membrane-Bound $Na^+$-$K^+$-ATPase in Intestinal Mucosal Cells.

Malcolm Herbert Taylor, of Baltimore, Md., B. A. Franklin and Marshall College, 1964. Physiology.

Alterations in Glucose Homeostasis and Water Utilization in Adult Rats after Neonatal Corticosterone Treatment.

John Philip Welch, of Cheshire, England, M. B. and Ch. B. Edinburgh University, 1958. Human Genetics.

Investigations Relating to the Causes and Consequences of Chromosome Aberrations, with Particular Attention to Behavioral Changes.

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# MASTERS OF SCIENCE IN ENGINEERING

## in the Faculty of Arts and Sciences

Elwyn Sessions Baker, of Holland Patent, N.Y., B.S. Union College and University, 1967. Mechanics.

A Study of the Unsteady Flow over an Obstacle in a Channel.

Richard Cavett Brooks, of Arlington, Va., B.E.E. University of Virginia, 1967. Electrical Engineering.

Digital Filtering of Left Ventricular Volume and Calculation of Aortic Root Blood Flow.

Jean-Pierre Cavelle, of Saint-Ouen, France, Dipl. in Engr. Ècole Centrale des Arts et Manufactures, 1968. Mechanics.

Time History of Velocity Waves in a Reacting Fluid.

James Joseph Cross, of Victoria, Australia, B.A. University of Melbourne, 1965. Mechanics.

Symmetry Groups.

George Gary Elder, of Baltimore, Md., B.E.S. The Johns Hopkins University, 1968. Mechanics.

An Examination of the Perpendicular Impact of Two Viscous Streams at Low Reynolds Number.

Meir Kalman Florenz, of Livingston, N.J., B.E. The Cooper Union, 1967. Mechanics.

Two Dimensional Plastic Compression of Polycrystalline Aluminum.

Robert Kenneth Gates, of Morristown, N.J., B.S.Mth. Michigan Technological University, 1968. Operations Research and Industrial Engineering.

Olivier Guillon, of Paris, France, Engineering Diploma School of Central Lyons, 1967. Mechanics.

Local Measurements in a Turbulent Flame by Hot Wire Anemometry.

Richard Daniel Healy, of Fairfax, Va., B.E.E. University of Virginia, 1968. Electrical Engineering.

The Computation of the Response of a Linear Time Invariant System Using High Speed Digital Computers.

Edwin Eugene Herricks, of Belleville, Ill., B.A. The University of Kansas, 1968. Geography and Environmental Engineering.

Microfaunal Fluctuations in Enriched Process Waters.

Myung Suk Kim, of Seoul, Korea, B.S.E. Seoul National University, 1963. Electrical Engineering.

Alfred Burton Marsh III, of Baltimore, Md., B.A. The Johns Hopkins University, 1968. Operations Research and Industrial Engineering.

David J. Reuben, of Indianapolis, Ind., B.A. Yale University, 1966. Computer Science.

Maria Amparo Sanabria, of Caracas, Venezuela, Civil Engineer Central University of Venezuela, 1964. Geography and Environmental Engineering.

A Study of the Viability of *Entamoeba histolytica* under Environmental Conditions.

Jay Raymond Sculley, of Hollywood, Fla., B.S. Virginia Military Institute, 1962. Geography and Environmental Engineering.

An Energy Budget Study of a Small Industrial Process Pond.

Olivier Jean-Jacques Spire, of Paris, France, Dipl. in C.E. School of Metallurgy and Mines, Nancy, France, 1968. Operations Research and Industrial Engineering.

Srisard Vanasin, of Bangkok, Thailand, B.A. Chulalongkorn University, Bangkok, Thailand, 1966. Geography and Environmental Engineering.

Study of the Upper Chao Phraya Drainage Basin: Ping, Wang, Yom, Nan.

Jesús Enrique Villarroel Q, of Carúpano, Venezuela, Civil Engineer Central University of Venezuela, 1965. Geography and Environmental Engineering.

A Study of a Wastewater Treatment System (Oxidation Ditch) and its Potential Use in a Tropical Area (Venezuela).

Donald G. Wilson, of Philadelphia, Pa., B.S. Dickinson College, 1962. Electrical Engineering.

A Procedure for Computing and Displaying Time Varying Power Spectra Illustrated by Application.

Richard Philip Yoder, of Springfield, Pa., B.S.C.E. Lehigh University, 1968. Geography and Environmental Engineering.

Effect of Nitrate and Phosphate on Mixed Algae Cultures in Stream Water.

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# MASTERS OF ARTS IN TEACHING

## in the Faculty of Arts and Sciences

Ariel Lee Adams, Jr., of Baltimore, Md., B. S. Lafayette College, 1965.

Nancy Patricia Amodeo, of New Brunswick, N. J., A. B. Oberlin College, 1968.

Diana Barocco, of Elkland, Pa., B. A. The College of William and Mary in Virginia, 1968.

Jinny Wade Voris Batterson, of Baltimore, Md., A. B. Randolph-Macon Women's College, 1969.

Brigitte Regina Bentele, of Fairfield, Conn., A. B. Earlham College, 1966.

Carol Lynn Berns, of Freeport, N. Y., A. B. Vassar College, 1969.

Elizabeth Elaine Hall Boynton, of Glen Burnie, Md., B. A. Pembroke College, 1967.

Barbara Karen Brown, of Lincoln Park, Mich., B. S. in Chemistry University of Michigan, 1968.

William Yancey Brown, of Alexandria, Va., B. A. University of Virginia, 1969.

Elizabeth Josephine Bryan, of Langhorne, Pa., A. B. Wilson College, 1969.

Mary Ann Curran, of Seattle, Washington, B. A. Seattle University, 1968.

Doreen Jane Dotalo, of Framingham, Mass., A. B. Regis College, 1968.

Scarff Wright Downing, of Baltimore, Md., A. B. Princeton University, 1965.

Susan Ward Dunn, of Hammond, La., B. A. Newcomb College, 1968.

Herbert Allen Edelstein, of Baltimore, Md., B. S. University of Maryland, 1966.

Franklin Lester Edge, of Olympia, Wash., B. S. University of Washington, 1969.

Justine Frances Forbes, of Rocky River, Ohio, B. A. Denison University, 1969.

Susan Jean Fradkin, of Baltimore, Md., B. A. Antioch College, 1969.

Martha Esther Gellman, of Hightstown, N. J., B. A. Bryn Mawr College, 1968.

Joseph Francis Glebas, of Baltimore, Md., B. A. The Catholic University of America, 1969.

Dana Ellen Gleicher, of Maplewood, N. J., A. B. Barnard College, 1967.

Laura Jean Halford, of Norwell, Mass., A. B. The University of Michigan, 1968.

Corwith Randall Hansen, of Southampton, N. Y., A. B. The University of Michigan, 1969.

Michelle Hope Herwald, of Pittsburgh, Pa., A. B. Cornell University, 1968.

Mary Kathleen Hickey, of Denver, Colo., B. A. Seattle University, 1966.

Paula Elizabeth Hinshaw, of Elkin, N. C., B. A. The University of North Carolina at Greensboro, 1969.

Linda Jean Hoy, of Fort Smith, Ark., B. A. University of Arkansas, 1967.

Nancy Anne Huntington, of Granby, Conn., A. B. Wilson College, 1968.

Susan Mary Jenkins, of Arlington Heights, Ill., B. A. The St. Lawrence University, 1969.

Gene Emmet Kaldenberg, of Cedar Falls, Iowa, B. A. Simpson College, 1967.

Suzanne Mari Pilmer Kaufmann, of Stanford, Calif., A. B. Stanford University, 1968.

Carolyn Jane Kydd, of Pottersville, N. J., B. A .The University of Vermont, 1966.

Arthur Isaac Leaderman, of Baltimore, Md., A. B. Columbia University, 1969.

Mary-Elisabeth Lupo, of Albany, N. Y., B. A. Manhattanville College of the Sacred Heart, 1968.

Ina Anne Markowitz, of New York, N. Y., B. S. The City College of the City University of New York, 1968.

Kenneth Joseph Martin, of Brooklyn, N. Y., B. A. The Catholic University of America, 1969.

Sarah Jane Massey, of Richmond, Va., A. B. Sweet Briar College, 1968.

Mary Elizabeth Mast, of Midland, Texas, B. A. The University of Texas, 1968.

Linda Eileen Mayer, of Glencoe, Ill., A. B. University of Michigan, 1968.

Jane Ellen Mazur, of North Royalton, Ohio, B. S. Baldwin-Wallace College, 1969.

Bernadette Marie Memoli, of New Milford, N. J., A. B. Emmanuel College, 1969.

Elizabeth Ann Montgomery, of Downers Grove, Ill., B. A. Oberlin College, 1969.

Keith Richard Ohmart, of Rome, N. Y., A. B. Colgate University, 1969.

Ann Lynn O'Malley, of Danville, Ky., B. A. Centre College of Kentucky, 1968.

Nancy Jean O'Neil, of Cheshire, Conn., A. B. Smith College, 1969.

Pamela Gay Ott, of San Francisco, Calif., A. B. Stanford University, 1968.

James Robert Owen, of Freehold, N. J., B. A. Drew University, 1968.

Rosanna Lee Parmeter, of Huron, S. Dak., A. B. Oberlin College, 1969.

Susan Anne Hindmarsh Penny, of Pittsburgh, Pa., A. B. Pembroke College, 1968.

Susan Elizabeth Powell, of Bartow, W. Va., A. B. Mary Baldwin College, 1968.

Robbyn Lynn Ramp, of Pittsford, N. Y., B. A. Hiram College, 1969.

Mary Elizabeth Brandis Rasmussen, of Champaign, Ill., A. B. Grinnell College, 1968.

Edward Michael Ricci, of Brooklyn, N. Y., B. A. University of Maryland, 1969.

Judith Elaine Robinson, of Bridgeton, N. J., A. B. Smith College, 1969.

Merle Susan Kurzrock Rosenberg, of Newark, N. J., A. B. Boston University, 1967.

Helen Griffith Ross, of St. Louis, Mo., A. B. Smith College, 1969.

Susan Marie Saccoccia, of Cranston, R. I., A. B. Trinity College, Washington, D. C., 1968.

Elizabeth Anne Sayre, of Levittown, New York, A. B. College of New Rochelle, 1968.

Nancy Ellen Belcher Sederberg, of Baltimore, Md., B. A. Lawrence University, 1967.

Mary Helen Shanklin Shields, of Baltimore, Md., B. A. Coe College, 1967.

Geoffrey Putnam Smith, of N. Andover, Mass., B. S. in Humanities and Science, Massachusetts Institute of Technology, 1968.

Janet Marie Smith, of Hicksville, N. Y., B. S. Molloy Catholic College for Women, 1969.

Gale Valerie Stahelski, of West Springfield, Mass., A. B. Emmanuel College, 1969.

Janet Carbys Stark, of Mequon, Wis., B. A. Carleton College, 1968.

Marjorie Scott Steinberg, of Bethesda, Md., A. B. Stanford University, 1968.

Trudi Ann Stroup, of West Hempstead, N. Y., B. A. Wellesley College, 1967; M. A. The Johns Hopkins University, 1969.

Rose Marie Swol, of Middletown, Conn., B. A. Pembroke College, 1968.

Martin Joseph Teitell, of Far Rockaway, N. Y., B. A. State University at Oneonta, N. Y., 1967.

Clara Rowell Thompson, of San Jose, Calif., B. A. The University of Kansas, 1969.

Edward Fairchild Torsch, of Baltimore, Md., B. A. The Johns Hopkins University, 1953; B. D. Princeton Theological Seminary, 1956.

Susan Doris Toscani, of New York, N. Y., B. A. Manhattanville College of the Sacred Heart, 1969.

William Douglas Travis, of Westport, Conn., A. B. Colgate University, 1969.

Susan Carol Wolford, of Weedsport, N. Y., B. S. The St. Lawrence University, 1969.

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# MASTERS OF ARTS

## in the Faculty of Arts and Sciences

Rosalie Silber Abrams, of Baltimore, Md., B. S. The Johns Hopkins University, 1963. Political Science.

State Governmental Structure Affecting Enactment and Implementation of a Federal Program: A Case Study of Medicaid in Maryland.

Bharat Bhushan Agrawal, of Nagpur, India, B. S. Nagpur University, 1965. Physics.

Polynomial Approximation in Three Dimensions.

Meredith Artis Anthony, of Washington, Pa., B. A. St. Johns College (Md.), 1969. Writing Seminars.

*Four Bus Stories*, A Collection of Short Stories.

Craig Cain Arnold, of Braintree, Mass., B. A. The Johns Hopkins University, 1967. History.

Christina Elizabeth Askounis, of Langley, Va., B. A. Mary Washington College, 1968. Writing Seminars.

*Dreams of the Ice Cream Farm.* Poems.

David Lynn Atkinson, of Valdosta, Ga., A. B. Valdosta State College (Ga.), 1966. German.

Ines Azar, of Riverdale, Md. Romance Languages.

Carol Joseph Bagan, of Baltimore, Md., B. A. Skidmore College, 1957. Writing Seminars.

*The Vacancy Sign*, First Half of a Novel-in-Progress.

Thomas Paul Bazarnick, of Amsterdam, N. Y., B. S. Rensselaer Polytechnic Institute, 1968. Chemistry.

Thomas Luther Benson, of Westminster, Md., A. B. Augustana College, 1962; S. T. B. Harvard Divinity School, 1966. Philosophy.

Nancy Linn Borley, of Zanesville, Ohio, A. B. Bryn Mawr College, 1967. German.

Dennis Wayne Boyles, of Santa Ana, Calif., B. A. University of Baltimore, 1969. Writing Seminars.

*Travelogues*: Poems.

Julian William Breslow, of Bronx, N. Y., B. A. New York University, 1968. English.

Paul Michael Buonaguro, of Cranford, N. J., B. A. La Salle College, 1970. Writing Seminars.

*The Magic Wood*, A Collection of Poems.

Maria Eleanora Calderon, of Arnold, Md. Romance Languages.

Barbara Mita Chaikin, of Inglewood, Calif., B. A. University of California, Los Angeles, 1967. Romance Languages.

James Creighton Christman, Jr., of Myerstown, Pa., B. S. Ch. Lehigh University, 1969. Biology.

Shirley Graves Cochrane, of Washington, D. C., A. B. Agnes Scott College, 1946. Writing Seminars.

*A Matter of Kinship*, A Collection of Short Stories.

William Adolph Cooney, of Baltimore, Md., B. S. University of New Hampshire, 1962. Chemistry.

Gerald Peter Costanzo, of Milwaukie, Oreg., A. B. Harvard College, 1967; M. A. T. The Johns Hopkins University, 1969. Writing Seminars.

*Whispers of Ghosts*, A Collection of Poems.

Enrique Cuan, of Baltimore, Md., A. B. Gonzaga University, 1966. Romance Languages.

Alan Frederick Day, of Bristol, England, B. A. University of Southampton, 1965; M. A. McMaster University, 1967. History.

Leonel Antonio de la Cuesta, of Bel Air, Md. Romance Languages.

Marie-Monique de Varennes, of Narberth, Pa., A. B. Cornell University, 1969. Writing Seminars.

*Artifacts*, First Part of a Three-Part Novel.

Ellen Barbara Dickstein, of Bellerose, N. Y., B. A. Queens College, New York, 1968. Psychology.

Adam Clayton Diller III, of Alfred, N. Y., B. A. University of Colorado, 1962. Philosophy.

Mary Ellen Dougherty, of Baltimore, Md., A. B. College of Notre Dame of Maryland, 1959. Writing Seminars.

*Fire by Resurrection*, A Collection of Poems.

Constance Mary Duff, of Stoneham, Mass., B. A. University of Pittsburgh, 1969. Classics.

Warren Legran Fine, of Kansas City, Kans. Writing Seminars.

*Atlantic*, A Portion of a Novel.

Michael Anton Flusche, of Baltimore, Md., A. B. Spring Hill College, 1965. History.

David Franks, of Baltimore, Md., B. A. Hobart College, 1964. Writing Seminars.

*A Collection of Poems.*

Herbert Ira Fried, of Brooklyn, N. Y., A. B. Cornell University, 1966. Romance Languages.

Barbara Louise Furne, of Waltham, Mass., B. A. Wellesley College, 1969. Writing Seminars.

*Noetic Flow*, A Collection of Poems.

Leontina Kelly Gallagher, of San Francisco, Calif., B. A. Newcomb College, 1966. Romance Languages.

Gary Paul Garson, of West Palm Beach, Fla., B. A. Tulane University, 1968. Writing Seminars.

*The Angler Fish: Poems.*

Rhoda Takiff Gelfond, of Philadelphia, Pa., B. A. University of Pennsylvania, 1968. Writing Seminars.

*Catches*, A Collection of Poems.

Edward Scott Gold, of Baltimore, Md., B. A. University of Maryland, 1969. Writing Seminars.

*Implications*, A Collection of Poems.

Stanley Buddie Golob, of Far Rockaway, N. Y., B. S. Brooklyn College, 1965. Mathematics.

David Goodwin, of Queens Village, N. Y.. B. S. Cornell University, 1967. Political Science.

The Role of the Advisory Agency in Government: A Comparison of the Policy Planning Council and the Council of Economic Advisers.

Donald Richard Gordon, of Washington, D. C., A. B. The George Washington University, 1964. Geography and Environmental Engineering.

Mapped Distributions of Major Perennial Species within a Small Maryland Piedmont Drainage Basin.

Dagmar Marie-Roxanne Scherer Grimm, of Baltimore, Md., B. S. The Johns Hopkins University, 1968. German.

James Wilson Hall, of Hopkinsville, Ky., B. A. Florida Presbyterian College, 1969. Writing Seminars.

*Impacted Whimsies*, A Collection of Poems.

Stephen Charles Halpern, of Bronx, N. Y., B. A. The City College of New York, 1967. Political Science.

The Buckley Machine: Its Organizational and Electoral Support and the Nature of its Reform Opposition.

Marie Elaine Hallam, of Baltimore, Md., B. S. The George Washington University, 1964. Geochemistry.

Susan Webb Hammond, of Washington, D. C., B. A. Bryn Mawr College, 1954. Political Science.

Richard Campbell Haskell, of Reading, Pa., B. S. Lehigh University, 1967. Physics.

John Blake Haynes, Jr., of Syracuse, N. Y., B. S. University of Notre Dame, 1967. Physics.

Thomas Roger Hefty, of Monticello, Wis., B. A. University of Wisconsin, 1969. Political Economy.

The Analysis of Long Run Hospital Costs.

Robert F. Heile, of Chicago, Ill., A. B. Oberlin College, 1966. Physics.

Marvin Arthur Hein, of Detroit, Mich., B. S. Trinity University, 1961. Chemistry.

John Oliver Herrmann, Jr., of Baltimore, Md., B. S. Loyola College, 1965. Writing Seminars.

*Poems and Fictions.*

Robert Lee Hickerson, of Baltimore, Md., B. S. Virginia Military Institute, 1958; M. S. The Johns Hopkins University, 1966. Physics.

** William Ogden Hubbard, of New York, N. Y., B. A. Yale University, 1966. History.

Bruce Lewis Jaffee, of Worcester, Mass., B. A. Brown University, 1967. Political Economy.

Lawrence Joseph Johnson, of Mauston, Wis., B. A. The University of Wisconsin, 1967. English.

Dennis Jasper Judd, of Pittsburgh, Pa. Physics.

Florence Schwartz Karlsberg, of Baltimore, Md., A. B. Goucher College, 1962. Social Relations.

Factors Influencing the Utilization of Medical Care.

Jeffrey Albert Kay, of Washington, D. C., A. B. Columbia University, 1967. History.

Ellen Rose Kerman, of Baltimore, Md., B. S. Beloit College, 1967. Chemistry.

Robert Edward Kehoe, of Queens Village, N. Y., B. A. Queens College, New York, 1968. History.

Ismith M. Khan, of New York, N. Y., B. A. New School for Social Research, 1963. Writing Seminars.

*The Crucifixion*, A Novella.

Mary Louise Kinzie, of Minneapolis, Minn., B. A. Northwestern University, 1967. Writing Seminars.

*Fourth Floor, Midwest*, Segments of a Novel-in-Progress.

David Holmquist Kirkham, of Marlboro, Vt., B. S. Beloit College, 1966. Earth and Planetary Sciences.

Peter Giles Kotcher, of Baltimore, Md., B. A. Rice University, 1967. Chemistry.

Edmund Michael Kulsick, of Garden City, N. Y., B. S. Fordham University, 1969. Classics.

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** Posthumously.

Joseph Lacetera, of Baltimore, Md., B. S. The Johns Hopkins University, 1964. Physics.

Beverly Campbell Leetch, of Baltimore, Md., A. B. Mary Baldwin College, 1964. Romance Languages.

Nickolaus Engelhardt Leggett, of Chicago, Ill., B. A. Wesleyan University, 1968. Political Science.

A Quantitative Study of the American Patent System.

Steven Eric Levitsky, of Montreal, Que., Canada, B. A. Acadia University, 1968. English.

Tong Kun Lim, of Seoul, Korea, B. S. Seoul National University, 1964. Physics.

Robert Theodore Livernash, of Cambridge, Mass., B. A. The Johns Hopkins University, 1970. Writing Seminars.

*Walking the Outer Circle*, A Collection of Poems.

Octavia Capuzzi Locke, of Washington, D. C., B. F. A. Temple University, 1952; B. S., 1952. Writing Seminars.

*Voice of the Burghetto*, A Novel.

Kenneth Dana Lyon, of New York, N. Y., B. S. Clarkson College of Technology, 1969. Writing Seminars.

A Collection of Poems.

Margo Magid, of Port Chester, N. Y., A. B. Goucher College, 1969. Writing Seminars.

*Poppet*, A Collection of Verse and Prose.

Robert Edward Martin, of Braintree, Mass., B. A. Northeastern University, 1967. Physics.

Theoretical Calculation of the Asymmetry Ratio for a Germanium Gamma-ray Polarimeter.

Patricia Ann Martone, of Staten Island, N. Y., B. A. New York University, 1968. Chemistry.

William Thomas Mason, of Hamilton, Ont., Canada, B. A. McMaster University, 1967. German.

Meredith Ann McCoy, of Malvern, Pa., B. A. University of Pennsylvania, 1968. German.

Marny Sharon Menkes, of Brooklyn, N. Y., B. A. Brooklyn College, 1969. Classics.

Joseph Hamilton Millar, of Fairfax, Calif., B. A. University of Pennsylvania, 1967. Writing Seminars.

*Untitled*, A Collection of Poems.

Ann Joy Neistadt, of Philadelphia, Pa., B. S. Drexel Institute of Technology, 1968. Chemistry.

Michael Richard Neville, of Minneapolis, Minn., B. A. St. Olaf College, 1965. Philosophy.

Geraldine Cleary Nichols, of Laredo, Texas. Romance Languages.

Joshua Jackson Norton, of North Hampton, N. H. Writing Seminars.

*The Blue And The Gray*, A Collection of Poems.

Susan Kathleen Numrich, of Oceanside, N. Y., A. B. Trinity College, Washington, D. C., 1967. Physics.

Isomer Shifts in Thulium Hydrides.

Patrick Jake O'Rourke, of Toledo, Ohio, B. A. Miami University, 1969. Writing Seminars.

*Andromache's Child in Ohio*, Eight Chapters of a Novel-in-Progress.

Charles Monroe Overby, of Scottsburg, Ind., B. S. Rose Polytechnic Institute, 1960. Psychology.

Claire Coleman Owens, of Baltimore, Md., A. B. Goucher College, 1956. Education.

Sharon Lee Pattyson, of Baldwin, N. Y., A. B. Vassar College, 1969. Writing Seminars.

*Visas*, Four Chapters of a Novel-in-Progress.

Karen Anne Paul, of Shrewsbury, Mass., A. B. Regis College, 1967. German.

Marianne Spencer Pearlman, of Greenbelt, Md. Romance Languages.

Edwin Judson Perkins, of Baltimore, Md., B. A. The College of William and Mary, 1961; M. B. A. University of Virginia, 1963. History.

John Ursulescu Peters, of Los Angeles, Calif., B. A. University of California, Los Angeles, 1967. English.

Doris Elaine Pickel, of Chatham, N. J., A. B. Gettysburg College, 1969. Chemistry.

Charles Douglass Plymell, of Wichita, Kans. Writing Seminars.

*Work In Progress*, A Collection of Prose and Verse.

Gerald Burton Pogoriler, of Toronto, Ont., Canada, B. A. University of Minnesota, 1965. Biology.

Robert Woodson Poor, of Village Mills, Texas, B. S. in Chemistry University of Oklahoma, 1964. Chemistry.

Robert Emmet Proctor III, of Los Angeles, Calif., B. A. University of San Francisco, 1967. Romance Languages.

Paul Thomas Raedeke, of Minnetonka, Minn., B. A. Gustavus Adolphus College, 1968. German.

David Connell Rankin, of Santa Rosa, Calif., B. A. University of California, Santa Barbara, 1967. History.

Carl Allen Rapp, of Atlanta, Ga., A. B. Emory University, 1968. English.

John Albert Robinson, of Twin Falls, Idaho, B. A. Montana State College, 1966. German.

Walter Bruce Robinson, of Scarsdale, N. Y. Writing Seminars.

*Goody's Rampage*, A Collection of Poems and Light Verse.

William John Robert Rogan, of Baltimore, Md., B. S. University of Scranton, 1959. Biology.

Stephen Gary Rogers, of Peoria, Ill., B. A. Wabash College, 1969. Biology.

Carol Paula Rubenstein, of Bayside, L. I., N. Y., B. A. Bennington College, 1969. Writing Seminars.

*O Valiant Knight*, A Selection of Poems.

Nancy Alice Miller Rupp, of Eldridge, Iowa, B. A. Westminster College, 1966. Earth and Planetary Sciences.

Seasonal and Spatial Distribution of *Acartia tonsa* and *A. clausi* in Chesapeake Bay

Stuart Macy Rupp, of Ojai, Calif., B. S. Harvey Mudd College, 1966. Earth and Planetary Sciences.

Temporal Variations of the Deep Water at Ocean Station P.

David Perrin Sawyer, of Elephant Mountain, Vt. Writing Seminars.

*New Poems of Woodfall Livery*, A Collection of Poems.

Steven Csaba Scheer, of Baltimore, Md., A. B. John Carroll University, 1967; M. A., 1968. English.

Leonard Charles Schwartz, of Oak Park, Mich., B. A. The University of Chicago, 1966. Political Economy.

Theodore Charles Scuris, of Baltimore, Md., B. A. Brown University, 1964. Writing Seminars.

*Past in Present, Present in Past*, A Collection of Poems.

Martha Amelia Ryan Severens, of Oberlin, Ohio, B. A. Wells College, 1967. History of Art.

Wayne Howard Shaner, of Harvey Cedars, N. J., B. A. The Johns Hopkins University, 1969. Biology.

Jack Bryan Shelnutt, of Towson, Md., B. S. in L. A. The University of Tennessee, 1969. Psychology.

Peter Gordon Shepley, of New Bedford, Mass., B. A. University of Rhode Island, 1968. Writing Seminars.

*Alternatives in Prose and Poem.*

Robert William Shorthouse, of Victoria, B. C., Canada, B. A. The University of British Columbia, 1966. History.

Madeleine Anjubault Simons, of Arlington, Va. Romance Languages.

Myra Weisberg Sklarew, of Bethesda, Md., B. S. Tufts College, 1956. Writing Seminars.

*Life Signs*, A Collection of Poems.

Robert Allerton Sloane, of Port Washington, N. Y., B. A. Dartmouth College, 1964; M. A. University of Minnesota, 1967. Romance Languages.

Johnny Powell Sparkman, of Doyle, Tenn., B. S. The University of Tennessee, 1968. Psychology.

Gabrielle Michele Schuef Spiegel, of Westminster, Md., B. A. Bryn Mawr College, 1964; M. A. T. Harvard University, 1965. History.

Varlakonde Adiseshaiah Sreedhar, of Bangalore, India, B. S. University of Mysore, 1962; M. S. Bangalore University, 1965. Physics.

Linda Larson Stegman, of Evanston, Ill. Writing Seminars.

*Muddy Shoes and Moonhair*, Verse and Prose.

Gregory Alan Stiverson, of Tonasket, Wash., B. A. University of Washington, 1968. History.

*Bacchus by Leopards*, A Portion of a Novel in Verse and Prose.

Larry Edward Sullivan, of Chicago, Ill., B. A. De Paul University, 1966. History.

Charles Patrick Teixeira, of Niagara Falls, N. Y., B. A. State University of New York, 1970. Writing Seminars.

Mary Frances Jetton Teplin, of Memphis, Tenn., A. B. Mount Holyoke College, 1967. Political Economy.

Tain Pendleton Tompkins, of San Francisco, Calif., B. A. Washington & Lee University, 1964; M. A. School of Advanced International Studies, The Johns Hopkins University, 1968. Writing Seminars.

*Stories*, Three Fictional Narratives.

Judith Ann Willis Topping, of Baltimore, Md., B. A. Wellesley College, 1967. German.

John Seaman Townsend, of Chambersburg, Pa., B. S. Duke University, 1968. Physics.

Alec Leonard Turk, of Baltimore, Md., B. A. The Johns Hopkins University, 1968. English.

Ching-Hang Wang, of Taichung, Taiwan, China, B. S. Tunghai University, 1962; M. S. The North Dakota State University, 1966. Physics.

Philip Craig Wanner, of Baltimore, Md., A. B. Loyola College, 1968. Political Science.

The Discretionary Justice of Police.

Robert Edwin Watson, of Columbia, Md., B. A. University of Maryland, 1964. Writing Seminars.

*Ellen*, A Novel.

William Thomas Webner, of Largo, Md., B. S. Wilson Teachers College, 1950; M. A. Howard University, 1964. Writing Seminars.

*Gathered Light, A Verbal Ritual,* A Collection of Poems.

Lucinda Parshall Long Wedel, of Salisbury, Md., B. A. Mary Washington College, 1968. Political Science.

Grossroots as an American Political Myth.

Ann O'Hara Maria Boswell Wilkiemeyer, of Atlanta, Ga., A. B. Duke University, 1964. History of Art.

Robert Elmer Wilson, Jr., of Silver Spring, Md., B. A. The Johns Hopkins University, 1966. Earth and Planetary Sciences.

A Study of the Dispersion and Flushing of Waterborne Materials in the Northwest Branch of Baltimore Harbor, and the Relationship between These Physical Processes and the Water Quality of the Inner Harbor.

Judith Anne Wink, of Ridgewood, N. Y., A. B. Barnard College, 1968. English.

Jacqueline Fisher Wolfe, of Baltimore, Md., B. A. The College of William and Mary, 1953; M. Ed. The Johns Hopkins University, 1958. Romance Languages.

Timothy Richard Young, of West Reading, Pa., B. S. United States Military Academy, 1963. Chemistry.

Byung Chel Yunn, of Choong-Ku Taegu, Korea, B. S. Seoul National University, 1967. Physics.

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## DOCTORS OF PHILOSOPHY

### in the Faculty of Arts and Sciences

Barbara Hillson Abramowitz, of Washington, D. C., A. B. Colby College, 1951; M. A. Radcliffe College, 1955. Romance Languages.

Don Quijote's Ambiguous Names.

Richard J. Agnello, of Rochester, N. Y., A. B. The University of Rochester, 1964. Political Economy.

The Second Chesapeake Bay Bridge: A Cost-Benefit Study in Public Highway Investment.

Arthur Jacob Alexander, of Carbondale, Pa., B. S. Massachusetts Institute of Technology, 1959; M. Sc. University of London, The London School of Economics and Political Science, 1966. Political Economy.

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Richard John Allen, of Raymond, Alta, Canada, B. A. Brigham Young University, 1962; M. A. 1963. German.

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Michael Wayne Anderson, of Kennewick, Wash., A. B. Harvard College, 1964. Biology.

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Frank Leonard Benz, of Dunn Center, N. Dak., B. A. Wartburg College, 1954. Near Eastern Studies.

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Richard Alan Berk, of New York, N. Y., B. A. Yale University, 1964. Social Relations.

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Ronnie Forest Blackwelder, of Brighton, Colo., B. S. University of Colorado, 1964. Mechanics.

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David Carroll Bricker, of St. Louis, Mo., B. A. Amherst College, 1961; M. A. T. The Johns Hopkins University, 1962. Education.

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Frederic Bradford Burnham, of Troy, N. Y., A. B. Harvard University, 1960; B. D. Episcopal Theological School, 1963. History of Science.

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Peter Joseph Butterly, of Glasgow, Scotland, B. Sc. University of Glasgow, 1950; M. E. E. New York University, 1959. Electrical Engineering.

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Arnold B. Calica, of Forest Hills, N. Y., A. B. University of Michigan, 1959; M. S. University of Chicago, 1961. Mathematics.

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Janice Louise DeMoulin Callahan, of Baltimore, Md., B. S. University of Wisconsin, 1963. Statistics.

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Gary Andrew Chase, of Towson, Md., A. B. Harvard College, 1966. Statistics.

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John Alexander Conkling, of Baltimore, Md., B. S. Washington College, 1965. Chemistry.

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Andrea di Tommaso, of Chicago Heights, Ill., B. A. The Johns Hopkins University, 1962. Romance Languages.

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Douglas Ward Donigian, of Ford City, Pa., B. S. in Chemistry Carnegie Institute of Technology, 1964; M. A. The Johns Hopkins University, 1966. Chemistry.

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Marvin David Drake, of Baltimore, Md., B. S. E. E. University of Toledo, 1960. Electrical Engineering.

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James Joseph Fennessey, of Boston, Mass., B. A. College of the Holy Cross, 1963. Social Relations.

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Mary Foster Gore Forrester, of Baltimore, Md., A. B. Randolph Macon Women's College, 1962. Philosophy.

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Anton John Fredrickson, of Baltimore, Md., B. A. The Johns Hopkins University, 1957. Electrical Engineering.

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David John Fruin, of Hertfordshire, England, B. A. Hull University, 1961; M. A. in Psychology, University of London, 1965; M. A. The Johns Hopkins University, 1967. Psychology.

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Larry Duane Frye, of Mount Vernon, Ohio, B. S. Marietta College, 1965. Biology.

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John Joseph Gahan III, of Wilmington, Del., B. A. University of Delaware, 1965. Classics.

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Mary DuBose Garrard, of Indianola, Miss., B. A. Tulane University (Newcomb College), 1958; A. M. Radcliffe College, 1960. History of Art.

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Peter Andersen Geiser, of New York, N.Y., B.S. The City College of New York, 1962; M.A. The Johns Hopkins University, 1968. Earth and Planetary Sciences.

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Jamie Elmer Godfrey, of Bethesda, Md., S.B. The University of Chicago, 1954; M.A. University of Maryland, 1958. Biology.

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Donna Province Grill, of Williamsburg, Va., B.S. The College of William and Mary, 1966; M.A. The Johns Hopkins University, 1968. Psychology.

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Samuel Gubins, of Haverford, Pa., B.A. Reed College, 1964. Political Economy.

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Stephen Joseph Haris, of Kingsgrove, N.S.W. Australia, B.Sc. University of Sydney, 1965. Mathematics.

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John Martin Hartwick, of Ottawa, Ont., Canada, B.A. Carleton University, 1966. Political Economy.

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Elizabeth Roberta Hatcher, of Monterey, Calif., B.A. Dominican College of San Rafael, 1966; M.A. The Johns Hopkins University, 1968. English.

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Peter Voorhees Hauschka, of Damariscotta, Maine, B.A. Amherst College, 1964. Biology.

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Richard Helgerson, of Baltimore, Md., B.A. University of California, Riverside, 1963; M.A. The Johns Hopkins University, 1964. English.

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Gerry Fairbrother Hendrickson, of Baltimore, Md., B.S. University of Maryland, 1965; M.A. The Johns Hopkins University, 1969. Education.

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William Harley Henry, of St. Paul, Minn., B.A. Kenyon College, 1959; B.A. Christ Church, Oxford University, 1961; M.A. The Johns Hopkins University, 1964. English.

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Helga Maria Hernes, of Baltimore, Md., A.B. Mount Holyoke College, 1961; M.A. The Johns Hopkins University, 1967. Political Science.

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Brian Charles Hodgkin, of Lewiston, Maine, B.S. (Agricultural Eng.) University of Maine, 1963; B.S. (Electrical Eng.) 1964.

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Paul Fajvel Hoffman, of Toronto, Ont., Canada, B.Sc. McMaster University, 1964; M.A. The Johns Hopkins University, 1966. Earth and Planetary Sciences.

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Arthur Henry Hohl, of Baldwin, N.Y., B.A. Franklin and Marshall College, 1964. Geography and Environmental Engineering.

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Bruce Ziegler Hollmann, of Bayside, N. Y., B. S. Haverford College, 1953; B. E. E. Cornell University, 1958; M. S. Clarkson College of Technology, 1965. Electrical Engineering.

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Takao Hoshi, of Kanagawa-Ken, Japan, B. E. Tokyo Institute of Technology, 1963. Operations Research and Industrial Engineering.

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Alan Dighton Howard, of Davenport, Iowa, B. S. Yale University, 1961; A. M. Harvard University, 1962. Geography and Environmental Engineering.

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David Solomon Hyman, of Baltimore, Md., B. S. University of Maryland, 1949; M. S. E. The Johns Hopkins University, 1960; M. L. A. 1966. Geography and Environmental Engineering.

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Thomas Albert Jackson, of Baltimore, Md., B. A. Richmond College, 1953; B. D. Southeastern Baptist Theological Seminary, 1957. Near Eastern Studies.

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Barbara Susan Janowitz, of New York, N. Y., B. A. The City College of New York, 1964. Political Economy.

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James Lewis Jenkins, of Cincinnati, Ohio, B. S. University of Cincinnati, 1953; M. S. E. The Johns Hopkins University, 1963. Electrical Engineering.

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James Thomas Jenkins, of Algonquin, Ill., B. S. in Mech. Engr. Northwestern University, 1964. Mechanics.

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Erhard Friedrich Joeres, of Kassel, Germany, B. E. S. The Johns Hopkins University, 1961; M. S. E. 1965. Geography and Environmental Engineering.

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Kenneth Olafur Johnson, of Baltimore, Md., B. S. E. E. University of Washington, 1961; M. S. Syracuse University, 1965. Biomedical Engineering.

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Martin Lewis Johnson, of Plainfield, Vt., B. S. University of Colorado, 1954; M. S. Massachusetts Institute of Technology, 1959. Earth and Planetary Sciences.

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Janice Lorraine Yates Jones, of Silver Spring, Md., B. S. St. Bonaventure University, 1965. Biophysics.

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Kenneth George Kay, of New York, N. Y., B. S. and M. S. Polytechnic Institute of Brooklyn, 1965. Chemistry.

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Esther Rochelle Kingston, of Detroit, Mich., A. B. Antioch College, 1961; M. A. The Johns Hopkins University, 1965. History.

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Peter Robert Kolchin, of New York, N. Y., A. B. Columbia University, 1964. History.

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Michael Seibert Koppisch, of Baltimore, Md., B. A. The Johns Hopkins University, 1964; M. A., 1967. Romance Languages.

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Michael Joseph Kuhar, of Eynon, Pa., B. S. University of Scranton, 1965. Biophysics.

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Albert Yi-Shuong Kuo, of Tayuan, Taoyuan, Taiwan, B. S. National Taiwan University, 1962. Mechanics.

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Ben Ellis Laden, of Columbus, Ohio, A. B. Princeton University, 1963. Political Economy.

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Robert Franklin Ladenson, of Chicago, Ill., B. A. The University of Wisconsin, 1965. Philosophy.

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Kenneth Douglas Lane, of Baltimore, Md., B. S. Georgia Institute of Technology, 1964; M. S., 1965. Physics.

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Neil Matthew Larkin, of Pittsford, N.Y., B.A. Trinity College, Hartford, Conn., 1958; M.A. The Johns Hopkins University, 1962. Romance Languages.

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Joyce Ann Rohr Lilie, of Huntington, W. Va., B.A. Marshall University, 1963; M.A. The Johns Hopkins University, 1966. Political Science.

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Stuart Allen Lilie, of Lockwood, Mo., B.A. Drake University, 1963. Political Science.

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Hua-Kuang Liu, of Taipei, Taiwan, Republic of China, B.S. National Taiwan University, 1962; M.S. State University of Iowa, 1965. Electrical Engineering.

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Harold Clayton Livesay, of Wilmington, Del., B.A. University of Delaware, 1966; M.A. The Johns Hopkins University, 1968. History.

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Eddie Lei Loh, of Blacksburg, Va., B.S. Virginia Polytechnic Institute, 1961. Physics.

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John Charles Malone, of Cockeysville, Md., B.E. Yale University, 1963; M.S.E. The Johns Hopkins University, 1964. Operations Research and Industrial Engineering.

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Freydoon Mansouri, of Tehran, Iran, A.B. University of Pennsylvania, 1962. Physics.

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David Hunter Marks, of Liberty, N.Y., B.C.E. Cornell University, 1962; M.S. 1964. Geography and Environmental Engineering.

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Raymond Gerald Martin, of Ellicott City, Md., B.Sc. Imperial College, University of London, 1945; M.S.E. The Johns Hopkins University, 1963. Electrical Engineering.

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Dennis Peter McCort, of Hoboken, N.J., B.A. Saint Peter's College, 1963; M.A. The Johns Hopkins University, 1964. German.

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Mary Josephine Sexton McDill, of Baltimore, Md., B.S. The University of Alabama, 1956. Social Relations.

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Paul T. McFarlane, of Baltimore, Md., A.B. Rutgers University, 1966. Social Relations.

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Andrew Joseph McKenna, of Evanston, Ill., B.A. College of the Holy Cross, 1964. Romance Languages.

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Robert Allen Mercer, of Baltimore, Md., B.S. in Physics Carnegie Institute of Technology, 1964. Physics.

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Arve Michelsen, of Silver Spring, Md., Biomedical Engineering.

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Gerry Miller, of Baltimore, Md. B.E.S. The Johns Hopkins University, 1963. Electrical Engineering.

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Jay Edward Mittenthal, of Louisville, Ky., B.A. Amherst College, 1962. Biophysics.

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Philip Momberger, of Yeadon, Pa., B.A. Swarthmore College, 1961; M.A. Columbia University, 1963; M.A. The Johns Hopkins University, 1963. English.

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Charles Grady Morgan, of Edmonton, Alta., Canada, B.S. Memphis State University (Tenn.), 1966; M.S. The Johns Hopkins University, 1969. Philosophy.

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Reinhold Christopher Mueller, of St. Paul, Minn., B.A. College of St. Thomas, 1962; M.A. The Johns Hopkins University, 1965. History.

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Larry Wallace Muir, of Baltimore, Md., A. B. Harvard College, 1965. Biology.

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Roger Nanes, of Brooklyn, N. Y., B. A. Harpur College, 1965. Chemistry.

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Jeanne Sumner Newman, of Baltimore, Md., B. A. Goucher College, 1953. Geography and Environmental Engineering.

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Diana Farnham Fiske O'Hehir, of Berkeley, Calif., M. A. The Johns Hopkins University. Humanities.

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Steven Bernard Oppenheimer, of Brooklyn, N. Y., B. S. Brooklyn College, 1965. Biology.

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Clifford Errol Peterson, of Canton, N. Y., A. B. Rutgers University, 1963. International Studies.

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Juliet Rapaport Phillips, of Cockeysville, Md., A. B. Radcliffe College, 1965; M. A. The Johns Hopkins University, 1968. Psychology.

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Fernando Alberto Picó, S. J., of San Juan, P. R., B. A. Fordham University, 1965; M. A., 1966. History.

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Patrick Glenn Porter, of Pasadena, Texas, B. A. William Marsh Rice University, 1966; M. A. The Johns Hopkins University, 1968. History.

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Hugh Donald Ratliff, of Hanceville, Ala., B. S. University of Alabama, 1965; M. S., 1967. Operations Research and Industrial Engineering.

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Samuel Sholom Rifman, of Baltimore, Md., B. E.S. The Johns Hopkins University, 1963. Electrical Engineering.

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Sally Rutherfurd Roberts, of Princeton, N. J., A. B. Smith College, 1950; M. A. New York University, 1959. History of Art.

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Nilde Gertrudis Krieghoff Robertson, of Takoma Park, Md., B. A. Columbia Union College, 1964; M. A. The Johns Hopkins University, 1967. Chemistry.

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Donald Jay Roufa, of St. Louis, Mo., B. A. Amherst College, 1965. Biology.

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Wolfgang Herbert Sachse, of St. Marys, Pa., B. S. The Pennsylvania State University, 1963; M. S. E. The Johns Hopkins University, 1966. Mechanics.

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Hiroshi Sadamichi, of Kyoto, Japan, B. A. Osaka University, 1959; M. A. Kyoto University, 1961. Poltical Economy.

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David Schlosberg, of Brookline, Mass., B. S. Massachusetts Institute of Technology, 1964. Mechanics.

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John Detlev Schmidt, of Frederick, Okla., B. A. Concordia Senior College, 1960; B. D. Concordia Seminary, 1964. Near Eastern Studies.

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Walter Werner Schmiegel, of Livonia, Mich., B. S. The University of Michigan, 1963; M. A. Dartmouth College, 1965. Chemistry.

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William Thurber Schrader, of Oceanside, N. Y., B. A. The Johns Hopkins University, 1964. Biology.

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Walter Gaylord Scott, of Stillwater, Okla., B. A. Baylor University, 1949; M. A., 1958; B. D. Southwestern Baptist Theological Seminary, 1952; Th. M., 1954. Philosophy.

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Peter Carl Sederberg, of Minneapolis, Minn., B. A. University of Minnesota, 1965; M. A. The Johns Hopkins University, 1967. Political Science.

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Carl James Seliskar, of Middlefield, Ohio, B. S. The Ohio State University, 1965. Biology.

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Robley Justin Simpson, of Westlake, Ohio, B. S. Brown University, 1962. Mathematics.

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Joseph Norbert Skwish, of Olyphant, Pa., B. S. The Pennsylvania State University, 1962; M. S. The University of Rochester, 1965. Statistics.

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Oyindamola Somorin, of Lagos, Nigeria, B. S. Ahmadu Bello University, Zaria, Northern Nigeria, 1967. Chemistry.

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Gretchen Cheney Southard, of Princeton, N. J., A. B. Vasser College, 1967. Classics.

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Paul George Spitzer, of Seattle, Wash., B. A. Reed College, 1959. History of Science.

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Edward Dixon Stroup, of Honolulu, Hawaii, A. B. University of Hawaii, 1956; M. A. The Johns Hopkins University, 1958. Earth and Planetary Sciences.

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Steven Eric Suter, of Shelby, Ohio, B. S. Bethany College, 1965. Psychology.

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Yuuzi Takahata, of Nagano-ken, Japan, B. S. Tokyo University of Education, 1963; M. S. 1965. Chemistry.

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Peter Darcy Tannock, of Perth, Western Australia, B. Ed. The University of Western Australia, 1962; M. Ed. 1965. Education.

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Philip Grant Tasch, of Middlesex, England, B. Sc. University of London, School of Economics and Political Science, 1963. Operations Research and Industrial Engineering.

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James Larry Taulbee, of Bellevue, Ky., B. A. Purdue University, 1964. International Studies.

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James George Truscott, of Higganun, Conn., B. A. The Johns Hopkins University, 1962; M. A. 1963. Romance Languages.

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Susan Bobbe Van Hemel, of New York, N. Y., A. B. Mount Holyoke College, 1965; M. A. The Johns Hopkins University, 1968. Psychology.

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Mary Rosalind Varney, of Las Vegas, Nev., B. A. Barnard College, 1961. Philosophy.

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Lawrence Joseph Viernstein, of Baltimore, Md., B. S. Oklahoma State University, 1949; M. S. 1950. Electrical Engineering.

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Ann Shieldon West Vivarelli, of Lake Forest, Ill., A. B. Radcliffe College, 1957; M. A. The Johns Hopkins University, 1959. Romance Languages.

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William George Von Holle, of Cincinnati, Ohio, B. S. Xavier University, 1963; M. A. The Johns Hopkins University, 1964. Chemistry.

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Edward Wesley Walton, of Anna, Ill., A. B. Carthage College, 1960; A. M. University of Illinois, 1963. Classics.

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Sophia Chung-Ling Liu Wang, of Taipei, Taiwan, Republic of China, B. S. National Taiwan University, 1960; M. A. The Johns Hopkins University, 1966. Chemistry.

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Thomas Andrew Weber, of Tiffin, Ohio, B. S. University of Notre Dame, 1966. Chemistry.

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Richard Merrill Wheeler, of Baltimore, Md., B. A. The Johns Hopkins University, 1964. Physics.

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Richard John William, of Freeland, Pa., B. A. Lehigh University, 1966; M. A. The Johns Hopkins University, 1968. Earth and Planetary Sciences.

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Robert Lee Williams, Jr., of Baltimore, Md., B. S. E. E. Duke University, 1956. Physics.

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Charles Elvin Williamson, of Bel Air, Md., B. S. The College of William and Mary, 1950. Chemistry.

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Hilda Wing, of Moorestown, N. J., B. A. Middlebury College, 1962; M. A. The Johns Hopkins University, 1967. Psychology.

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William Joseph Wiseman, Jr., of Baltimore, Md., B. E. S. The Johns Hopkins University, 1964; M. S. E. 1966; M. A. 1968. Earth and Planetary Sciences.

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Jean Arendes Wittich, of Baltimore, Md., B. S. The Johns Hopkins University, 1956; M. A. 1964. Education.

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John Curtis Wright, of Cockeysville, Md., B. S. Union College, 1965. Physics.

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Joseph Houng-Yu Yang, of Taichung, Taiwan, B. A. National Taiwan University, 1955. Electrical Engineering.

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